INSTRUCTOR AND STUDENT PERCEPTIONS OF INTERPERSONAL COMMUNICATION IN THE WORKFORCE DEVELOPMENT CLASSROOM IN A COMMUNITY COLLEGE

By
CARLA Z. HINKLE

Bachelor of Science
New Mexico State University
Las Cruces, New Mexico
1983

Associate of Applied Science
Tulsa Junior College
Tulsa, Oklahoma
1991

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Thesis Approved:

Thesis Advisor

Committee Member

Committee Member

Dean of the Graduate College

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CHAPTER I

INTRODUCTION

Interpersonal Communication in the Workplace

"Soft skills" have become a buzzword in and around workplaces and their human resource departments in recent years. With the current availability of technology and fast pace of competition in today's workplaces, top billing no longer goes to the organization or department with the best product or service, but to one which also includes efficient people skills (Goldwasser, 2000).

Peggy Klaus, a corporate trainer, was quoted in an article by Ganzel (2001) on training workers in the soft skills as saying, "There is nothing 'soft' about learning how to communicate, how to give constructive feedback or how to negotiate with a union, employees or customers. These are hard skills--the most difficult skills an employee has to learn" (p. 56). Klaus goes on to describe how common the need is for technically trained employees who can interact with customers directly. In years past, there may have been a layer of management or sales personnel whose responsibility it was to communicate. Now communicating is the responsibility of everyone.

Interpersonal communication is a basic skill many take for granted. However in today's workplace, the ability to interact effectively in a variety of circumstances can very well be the difference in the successful versus unsuccessful employee, department or corporation (Dolan, 2002; Fournier, 2001; Vice & Carnes, 2001).

High school graduates of today may not have experienced the same type of social interaction as previous generations. Social and media influences have changed substantially for Generation X and the Net Generation (Tapscott, 1999) as opposed to previous generations who still had conversation over dinner. While speaking, listening, reading, and writing may seem universal, at least within the same country, the variations in the use of these skills today prevent this universality. Interpersonal communication has taken on major changes in the past decade. Vocabularies change almost daily while being limited in their relevance regarding industry, geography, age and personal value systems. Along with face-to-face speaking and listening skills which are still critical, we now must integrate electronic mail, instant messaging and other visual and auditory communications via the Internet and electronic devices. The culture within which communication is taking place is evolving. Therefore, the communication itself and the tools for doing so are also evolving. (Dobbs, 2000; Kirsner, 2002; Papert, 1996; Tapscott, 1999).

Even within just the past few years, the once common-place pager has been replaced by cell phones. The personal digital assistant (PDA) and digital wireless phone are now becoming more prevalent, and are even merging into combined devices blending data management, communication and visual images (Microsoft Press Pass, 2002; Syware, 2003). The use of these devices in the workplace is increasing, taking full advantage of point-to-point communication. The rapid transfer of information via multiple channels has become essential, not optional. "We're experiencing a time of constant innovation – which I call the Digital Decade – that will transform the way we work," stated Bill Gates, Chairman of Microsoft (Microsoft Press Pass, 2002).

Interpersonal Communication in the Workforce Development Classroom

In 1991 the U.S. Department of Labor published the SCANS Report (1991). This report came after an intensive study looking into the skills considered to be prerequisite to workers successfully entering the job market (Gray & Herr, 1998). In part, this report was directed to educators. Within the SCANS Report, five Competencies and three Foundation elements are outlined as critical in any workforce preparatory curriculum. Interpersonal Skills and Information are two of the Competencies. In this document, Interpersonal Skills are defined as "working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds" (U.S. Department of Labor, 1991, p. 5). The topic of Information includes in its definition, "interpreting and communicating, and using computers to process information" (p. 5). Today the many forms of interpersonal communication in the workplace still apply as set out in these basic SCANS competencies.

The three Foundation elements described in the SCANS report include Basic Skills, Thinking Skills, and Personal Qualities. Subsets listed with these elements are Reading, Writing, Listening, Speaking and Sociability. Again, various forms of interpersonal interaction lie at the heart of a group of skills in which proficiency has been considered a requirement for successful workplace behavior. Also mentioned in this report is the fact that the skills needed in the workplace are not innate or assimilated via osmosis. These skills must be learned through their inclusion in workforce education (U.S. Department of Labor, 1991).

Occupational education tends to focus time and effort on job-specific content and skill competency in preparation for technical and application-oriented work. While these

aspects of the education may be stellar in their accomplishments of workforce preparation, interpersonal communication should not be a forgotten element in the workplace (Vice & Carnes, 2001). Work-related skills should not be taught in total isolation from the texture of the workplace. The various methods of interpersonal communication relevant to the specific industry should be integrated into the curriculum alongside core job-specific content and skills.

Instructors come from their respective fields to the community college setting as content experts having little or no formal education or training in instructional design or delivery. In many cases, a person's demonstration of career excellence or workplace proficiency leads to his or her selection to the post of Workforce Development (WFD) instructor. Some may have demonstrated strengths in areas of research or professional writing. While instructors may be experts on best practice within their career fields, they may lack a working knowledge of educational principles and applications as these apply to adults. They may lack awareness regarding current methods or variations that are possible when attempting to implement the simplest of learning and assessment strategies (Bonwell & Sutherland, 1996). In the end, these instructors stand before a classroom or laboratory filled with adult learners intending to gather sufficient information and skill to successfully enter the job market.

Many instructors tend to gravitate toward the traditional lecture as their primary teaching strategy, passively distributing information to learners (Brookfield, 1990; Huba & Freed, 2000). Thus, interpersonal interaction may be lacking in their classrooms. Less instructor-controlled methods involving a more active role on the part of the student are increasing in frequency in some colleges. However, without attention to the methods

being used for instructional delivery, the traditional format tends to remain the norm (Huba & Freed, 2000; Weimer, 2002).

Many college instructors may believe they interact regularly with their students. However, these beliefs may not be backed up by routine classroom assessment techniques. A lack of regular formative assessments in the classroom often leads to instructor assumptions of having accomplished a teaching goal when in fact the goal has not yet been achieved by learners. Often instructors depend on student body language and infer the accomplishment of teaching goals (Angelo & Cross, 1993). Unfortunately, the gap between instructor and student communication may not be realized until the summative evaluation, such as the final exam or skill assessment, if the gap is ever identified at all. If the formative and summative evaluations are based on content knowledge alone and do not include elements of interpersonal communication, assumptions of success may lead instructors far afield in accurately assessing the true skill set required for success in the workplace. Knowledge regarding classroom assessment techniques is an example of one of the many demands on instructors in terms of teaching and learning strategies with which WFD instructors may be unfamiliar (Angelo & Cross, 1993; Bonwell & Eison, 1991; Bonwell & Sutherland, 1996; Sutherland, 1996).

In summary, the skill set which applies to effective interpersonal communication must be learned in the context of the job skills to which they will apply. It should not be assumed that these skills will be present later on the job if they are not taught in school (Bransford & Vye, 1989; Huba & Freed, 2000; Taylor, 2000). Workforce education should be structured to intentionally engage students in various forms of interpersonal

interaction, consistent with the expectations of the workplace (U.S. Department of Labor, 1991). The instructional design, presentation and assessment skills required to accomplish this teaching goal may be undeveloped in WFD instructors who come to the community college classroom from industry without the benefit of instructional training. As a result, these instructors may misinterpret their degree of integration of interpersonal skills in their curricula and instructional practices. At the same time, students may not recognize the value of interpersonal skills as an element of both their education and potential job skill set.

Problem Statement

If WFD instructors are consciously aware of the level of importance of interpersonal communication in their industries, then they should translate that knowledge into fostering an equal level of importance for interpersonal communication to their students. If this is so, a similar level of importance relating to interpersonal interaction might then be perceived by students. On the other hand, if the instructor perceives interaction as a high priority in the workplace, but does not inject it into the classroom, the students might not perceive its necessity and might not be amply prepared for the workplace upon graduation.

Ideally, instructor perceptions of the necessity of interpersonal communication in the workplace will be translated with equal intensity to the students in the classroom. If this is happening, then it might later be shown that the students are capable of meeting the communication-related skills demands relevant to the work environment. It is important for the providers of WFD education to be aware of the complete nature of the preparedness level of its graduates.

At present, there is a lack of knowledge in many areas relating to interpersonal communication as it applies to WFD education at Tulsa Community College (TCC). Little if anything is known about the level of awareness WFD instructors have regarding interpersonal interaction in both the workplace and in the classroom. If instructors place a certain value on interpersonal interaction in their respective fields, then there should be evidence that this element is being reinforced in WFD education in a comparable manner. If, however, there is a disparity between the criticality given to interpersonal interaction in the workplace and the classroom, then attention should be given to enhancing this element within the teaching and learning strategies.

There is also a lack of knowledge about the variety of experiences for interpersonal communication available in the WFD classrooms at TCC. Simply put, that variety could include interaction between the instructor and student, student to student, or student to outside resource. Communication in the workplace must occur not just between the employee and supervisor, but across many different levels of rank and position. Employees must readily interact with customers, vendors, and executives both within their own organization and others in a given day. (Dolan, 2002; Ganzel, 2001; Goldwasser, 2000; Vice & Carnes, 2001). More information is needed to clarify if such workplace demands are being adequately addressed in the WFD teaching and learning strategies and opportunities in this community college.

Since most WFD instructors at TCC come directly from industry without the benefit of instructional training, they may not be aware of the unique qualities of adults as participants in education. Malcolm Knowles (1984), one of the foremost authorities on adult education, described this group based on the concept of andragogy. Andragogy

includes several elements to characterize adult learners, including the tendency to be self-directed, the desire to incorporate learning into practice immediately, the capacity to use their previous experience as a basis for their learning, and being motivated from within. This differs significantly from pedagogy which is the study of the education of children (Elias & Merriam, 1995; Gray & Herr, 1998; Merriam & Caffarella, 1999; Taylor, Marienau & Fiddler, 2000). Stephen Brookfield is widely referenced for his observations relating to and reflecting on personal experience as it applies to adult learning and teaching adults (Brookfield, 1990; Taylor, Marienau & Fiddler; 2000).

There is also a lack of knowledge about the level of awareness by TCC WFD students regarding the availability of interpersonal interaction in the classroom. This lack of knowledge extends to the variety of different categories of interpersonal communication in their WFD courses such as instructor to student, between students, and between students and outside resources.

There is a lack of knowledge as to variety in methods being used by TCC WFD instructors for interpersonal communication in the classroom such as reading, writing, listening, speaking, observation, skill performance or electronic media. Communication in the workplace is a complex endeavor. Graduates must have had the opportunity to practice a variety of skills in the course of their WFD education in order to adequately equip them with the tools for the workplace (U.S. Department of Labor, 1991).

Finally, due to these knowledge gaps, there is a lack of data upon which to base decisions about whether the current status of interpersonal interaction in the WFD classroom at TCC should be modified through the offering of continuing education to WFD instructors.

Purpose of the Study

The purpose of this study was to describe and compare the perceptions of WFD instructors and students at TCC with regard to interpersonal communication in both the workplace and classroom, as it applied to various categories and methods of interaction. These four components were used to accomplish this purpose:

1. Describe and compare the perceptions of WFD instructors at TCC regarding the necessity of interpersonal communication in their respective workplace and the availability of interpersonal communication in their classrooms.
2. Compare the instructors' perceptions regarding interpersonal communication in both the workplace and the classroom with student perceptions of the availability of interpersonal communication opportunities and requirements in the WFD classroom.
3. Describe and compare the perceptions of instructors and students with regard to interpersonal communication between instructor and student, student to student, and student to outside resources.
4. Describe the extent to which various methods of communicating such as reading, writing, listening, speaking, observation, skill performance and electronic media are perceived by instructors and students to be available in TCC WFD classrooms.

Research Questions

This study was guided by the following research questions:

1. What priority ratings do WFD instructors at TCC place on interpersonal communication as an element of workplace success?
2. What degree of availability do WFD instructors at TCC perceive regarding different

categories of interpersonal communication in the classroom, including instructor to student, student to student, and student to outside resource?

3. How do TCC WFD students perceive the availability of different categories of interpersonal communication in their WFD courses, including instructor to student, student to student and student to outside resource?
4. How do TCC WFD instructors and students perceive the availability of different methods of interaction including reading, writing, listening, speaking, observation, skill performance and electronic media?
5. What is the relationship between instructor and student perceptions regarding the availability of different categories as well as methods of interaction in the TCC WFD classroom?
6. What is the relationship between instructor perceptions of priority in the workplace and student perceptions of availability in the TCC WFD classroom?

Data to address these research questions was gathered through the use of three questionnaires (see Appendixes A, B and C) given to WFD instructors (N = 90) and their students (N = 1061) at TCC. Instructors were first asked to rate their perception of interpersonal interaction as an element of success in the workplace. Then, later in the same semester, both instructors and students were asked to rate their perceptions of interpersonal interaction in the classroom. Items in the questionnaires targeted the levels of interaction between various persons as well as a variety of communication media such as reading, writing, listening, skill performance and electronic media. Descriptive statistics and cross-tab analyses were compiled to reveal the various factors and relationships within the data as indicated in the research questions.

Definitions of Key Terms

The following definitions were applied in this study:

Conceptual Definitions

Assessment – elements used to measure the effectiveness of teaching and learning; efforts to determine if learning objectives have been accomplished (Angelo & Cross, 1993; Dick & Carey, 1996).

Collaborative learning - the shared contributions of learners and teachers where the group maintains its own authority; open-ended group work where learners can benefit from peer-review and receive critique while the teacher might serve only as a mediator (Lutz, 1999; Panitz, 1996; Tinzmann, Jones, Fennimore, Bakker, Fine, & Pierce, 1990).

Cooperative learning - learners assisting one another toward the accomplishment of their individual learning goals; the combined contributions of groups of learners working along an assigned plan or goal, as directed by an instructor (Cinelli, Symons, Bechtel and Rose-Colley, 1994; Panitz, 1996).

Interpersonal communication- communication between persons where there can be a sharing of information, values, emotions, roles or needs based on many types of both verbal and non-verbal exchange (Borchers, 1999).

Instructional strategy- the plan for the method of delivery for instruction, to include the elements of preparation, delivery, and assessment (Dick & Carey, 1996).

Workforce Development – educational programs designed to prepare learners to enter specific occupational fields (Tulsa Community College, 2003).

Operational Definitions

Classroom - a generalized term for the purposes of this study, referring to any setting in which teaching and learning take place under the sole direction of the designated instructor, to include the laboratory environment. Classroom activities would specifically not include clinical, fieldwork, workplace-related internships, or community service learning opportunities where the student is interacting directly with the workplace environment.

Perceptions of instructors and students – ratings on a 5-point Likert scale which would indicate the participant's belief relevant to each questionnaire item.

Assumptions

This study was subject to the following assumptions:

1. The collected data was assumed to be accurate and honest reflections of the views and perceptions of participants.
2. All of the instructors were assumed to be representative of their individual workforce specialties and to accurately report the needs in their industries.

To the extent that these assumptions are false, the internal validity of the study may have been compromised.

Limitations

The following limitations were accepted for this study:

1. The populations of this study were limited to the instructors and students from the WFD programs at TCC. With consideration to external validity and the tendency to

generalize the results to other populations (Shavelson, 1996), this study was strictly limited to the WFD courses at TCC. Generalizations to other schools should not be made.

2. The study relied entirely on data self-reported by instructors and students concerning their perception of experiences in specific WFD courses. Concerns arising from self-reported data are outlined by Wiersma (2000), and reflect potential issues with omissions and dishonest responses when survey items may be perceived as sensitive or could potentially reflect unfavorably on a person. Omissions and dishonest responses could have distorted the data, and there was no way to differentiate between honest or dishonest responses.

   Shavelson (1996) refers to internal validity as outcomes derived from the measurement of specific predetermined variables, rather than other factors not under consideration within a study. In this study, a threat to the internal validity exists in that there may have been variables such as dishonesty which may have had some effect on the data and which were unknown to this researcher. This was accepted as a limitation of the study.

3. This study is based on the perception ratings provided by participants as applied to their experiences to date. Reliability can be checked via the test-retest method to reflect consistency in the data (Wiersma, 2000). However, this was not applied to this study. Since both the instructors and students were asked to rate their perceptions regarding classroom interaction at or near mid-semester, they had twelve weeks to experience classroom interaction by that time. If the questionnaires had been given earlier, later or both, the perceptions might have been different each time, based on the

most current experiences. Also, participants could have developed biases, experienced an artificially heightened awareness to the elements of the study, or had a tendency to change their behaviors as a direct result of the study with multiple exposures to survey instruments. Data collected in this study were regarded as a snap-shot, or a view of perceptions at a frozen moment in time. Therefore, the lack of instrument test-retest reliability evaluation was considered and accepted as a limitation of the study.

4. The selection of courses surveyed was based on the availability of current course offerings at the time of the study. This could be considered a limitation to external validity (Wiersma, 2000) and a limitation of the study, although no generalizations were made outside this population.

Significance of the Study

Identifying the level of congruence between what instructors perceive they need to do for workplace preparation and what they are actually doing through instructional practice could have several important results:

1. Provide data regarding the current level of awareness of WFD instructors regarding interpersonal interaction in both the workplace and classroom. If WFD instructors regard interpersonal communication as a critical element in the workplace but do not report having included this element as part of their curriculum, then they may not be amply preparing their students for the demands of the workplace.
2. Provide data regarding the ability of TCC WFD instructors to provide learning

opportunities to students which are consistent with workplace demands. If WFD instructors regard interpersonal communication as a critical element in the workplace but do not report having provided opportunities to improve these skills, they make lack an awareness of such an inconsistency, or they may lack the curriculum development or instructional skills required to correct an inconsistency.

3. Serve as a basis for improving the effectiveness of WFD programs at TCC in the area of interpersonal interaction. If there is an inconsistency between the three questionnaires to the instructors and students, then attention could be drawn toward increasing the opportunities for a variety of interactions in the classroom. Adjustments in instructional design and delivery methods could improve WFD graduate performance in the workplace.
4. Enable the effective use of resources applied to faculty development in WFD for the improvement the classroom assessment and teaching strategies regarding interpersonal interaction. Should deficiencies be noted as a result of this study, resources such as time, effort and money could be made available for career development and continuing education directed toward the improvement of interpersonal communication in the instructional design and delivery methods of WFD instructors.
5. Improve the quality of TCC WFD graduates who typically serve employers throughout Oklahoma and surrounding states by drawing attention to the need for interpersonal interaction in the classroom environment. This study could provide evidence of the critical need for WFD graduates who are proficient in a variety of interpersonal communication skills based on current literature and market demands. Based on this evidence, changes could be made in WFD instructional design and

delivery if needed, which will equip current students with such skills.

6. Assist in meeting the demands of stakeholders who employ TCC WFD graduates. By providing evidence from a variety of industries served by WFD programs at TCC, current and future needs of stakeholders can be explored.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This review of the literature on interpersonal communication as it relates to the workplace and workforce development education has been organized into the following sections:

1. interpersonal communication in the workplace – including business, social and multicultural perspectives,
2. changes in interpersonal communication with the influence of technology,
3. interpersonal communication and college classroom teaching methods – including various methods of teaching and assessment, and
4. integrating communication skills into WFD programs – including the impact of Federal and State legislation, occupational duty task lists, and teaching methods.

Interpersonal Communication in the Workplace

There is a variety of information available confirming the need for effective communication in the workplace (Conference Board of Canada, 2000; Dolan, 2002; Ganzel, 2001; Joyner, 2002; McLaughlin, 1997; Sutton, 2002; Vice & Carnes, 2001; Watson & Gallois, 1998; Wilhelm, 1999). There are several substantial sources which

have examined and reported on the overall skills important for employability. These include the American Society of Training and Development's 1990 study titled "Workplace Basics", the SCANS Report of 1991, a Delphi study conducted by Wilhelm in 1999, the IDEA Project's list of "Examples of Essential Abilities" featuring fourteen institutions in the United States and United Kingdom (Brown, C., 1999), an overview written by Overtoom in 2000, "Employability Skills 2000+" from the Conference Board of Canada, and Moody, Steward and Bolt-Lee's 2002 study on the skills sought by business recruiters. Each of these sources rated communication highly among skills critical in the workplace.

Wilhelm's study (1999) compared the Foundation Skills and Competencies listed in the SCANS report (1990) with that of current employer requirements in Arizona via a Delphi study. In this study, employers rated "integrity/honesty" first, "reading" second, followed by "participates as a part of a team" third. Other communication skills were "listening" seventh, "sociability" eighth, "speaking" ninth, and "writing" twelfth of thirty-seven skills or competencies (Wilhelm, 1999).

Interpersonal Communication and the Business of the Workplace

Technical skills specific to a job or industry are often the focus during a person's search for suitable employment, including demonstrable skills and unique knowledge of a subject, along with job-specific training or education with credentials. However, with heavy competition among equally skilled applicants it is the less tangible "soft skills" which can determine the greatest potential between competitors (Ganzel, 2001; Overtoom, 2000). As Steven Mill, a job training consultant puts it, "Right now if you have two candidates, both technically sound – even if one person is ahead in technical

skills – the person with the better communication skills will get the job" (Sutton, 2002, August 9, p. 2). Even beyond securing employment, the need for interpersonal interaction does not end. Jackie Santos, an Information Technology Director and Chief Technology Officer says, "There may still be a few enclaves of technical personnel who can get away with limited human contact, but they are few and far between" (Sutton, 2002, August 23, p. 2).

The most basic type of interpersonal communication is that of one-to-one interaction. The skill set required for personal interaction typically includes reading, writing, speaking and listening. These are crucial in many business and medical occupations (Carnevale, Gainer & Meltzer, 1990; Dobbs, 2000; Dolan, 2002; The Economist, 2002; U.S. Department of Labor, 1991; Vice & Carnes, 2001; Wilhelm, 1999). There speaking, listening and observing body language are valuable assets. "There's no substitute for an in-person meeting with a customer. There's the handshake, the eye contact and the personal relationship with the customer that often develops after several such meetings" (Lauer, 2003, p. 2). There is no indication that the need for these critical one-to-one skills will fade; rather, the need is likely to increase in the future. Bill Gates described customer service as a priority in business in the future: "Human involvement in service will shift from routine, low-value tasks to a high-value, personal consultancy on important issues—problems or desires—for the customer" (Gates, 1999, p. 67).

Performance and observation of work activities are also opportunities for interpersonal interaction. The job standards of many occupations are evaluated for quality based on performance criteria. Competence can be determined by comparing

demonstrated ability with predetermined performance criteria (Carnevale, Gainer & Meltzer, 1990; Smith & Ragan, 1999). Skilled observations are necessary for ongoing self-assessment of job performance, quality control efforts, and maintaining safety standards. Observing the performance of others is also important when evaluating behavior as it relates to attitudes, as the visual element in active listening, and in the awareness of body language (Carnevale, Gainer & Meltzer, 1990; Dick & Carey, 1996; Warfield, 2001).

Another area within interpersonal communication in the workplace involves the use of technology and includes everything from the standard local area network telephone to wireless digital devices. Information transmitted from one party to another requires an understanding of the technology, its nuances and etiquette (Chisholm, 2003). There are skills involved in efficiently using both synchronous and asynchronous technologies in a manner that is consistent with the workplace setting. The need to link individuals from across buildings and around the globe in order to improve workplace collaboration invokes technology as it applies to interpersonal communication and the sharing of data. Telecommuting, instant messaging, video conferencing and web-based interactive software are examples of methods by which workers can share information with one another, with customers, consultants and management without requiring a physical presence or costly travel expense (Chen, 2003; Greengard, 2000; Microsoft Press Pass, 2002; Schrage, 2000; Stone, 2002; Stone, 2003; Syware, 2003; Thilmany, 2002; Tynan, 2002).

In the past there have been two rather distinct categories of employees. Management personnel were considered white-collar workers while the skilled laborers

were known as blue-collar workers. With the trend toward the flattening of organizational hierarchies, there is now a shorter distance between the two categories and often a blending of responsibilities and an increase in the need for communication skills (Ganzel, 2001; Joyner, 2002; Sabo, 2000). The latest product in workplace evolution is the "knowledge worker" or "gold-collar worker." Knowledge workers may or may not have professional credentials, but they can analyze, synthesize and evaluate information to solve problems, then combine technical knowledge with strong interpersonal communication skills (Brown, B., 1999; Microsoft Industry Perspectives, 2002; Microsoft Press Pass, 2002; Overtoom, 2000; Wonacott, 2002).

Knowledge workers may or may not hold an academic degree. They may hold a title of some form of "technician," "engineer," or even "customer service representative." This category also may include veteran workers in jobs where knowledge gained over many years has become invaluably collected within one person (Wonacott, 2002). Hallmark characteristics of knowledge workers include the ability to learn continually, communicate ideas, demonstrate leadership, and work in teams (Brown, B., 1999; Microsoft Industry Perspectives, 2002; Wonacott, 2002). Today's workers need to be proficient in the traditional and high-tech methods of interpersonal communication.

Interpersonal Communication and the Social Perspective in the Workplace

According to the Merriam-Webster online dictionary, the word "social" means, "involving allies or confederates;" "of or relating to human society, the interaction of the individual and the group, or the welfare of human beings as members of society;" and

"tending to form cooperative and interdependent relationships with others of one's kind" (Merriam-Webster Online, 2002).

As more information is required from a wider variety of sources in the workplace, both formal and informal collaborative work groups are formed. The major sources that have reported on the value of interpersonal communication also include teamwork, collaboration, and social interaction among their lists of essential skills (Brown, C., 1999; Carnevale, Gainer & Meltzer, 1990; Conference Board of Canada, 2000; Overtoom, 2000; Wilhelm, 1999).

Knowledge workers, as described earlier, are in part defined by their ability to function well as a team member and assume leadership responsibilities. These individuals are not only skilled in their crafts, but also possess strengths in problem solving, applying creativity and intelligence, and are capable of tackling complex work. Effective use of resources as exercised by the knowledge worker would include coordinating the contributions of many team members and placing a high value on the synergy of its members. (Brown, B., 1999; Overtoom, 2000; Wonacott, 2002).

As technology makes for faster communication with a greater variety of people, it fosters the collaborative workplace. The development of virtual teams, decreasing barriers between departments within companies, and even being able to supply raw data directly to suppliers and customers alike all contributes to the collaborative workplace. This trend is currently, and will continue saving travel costs as well as decreasing the cost of mistakes which can now be identified faster by more individuals who share information (Greengard, 2000; Thilmany, 2002; Tynan, 2002). With more workers in touch with more information, changes within organizations will no longer happen from

the top down. Technology does not isolate as much as it tends to socialize and integrate individuals with one another (Tapscott, 1999).

Collaboration occurs in any career field, with the interdependent relationships occurring both laterally and vertically between workers of similar station, between workers and management, and extending to individuals who might not share the same employer, such as customers, vendors, suppliers, and various stakeholders (Ganzel, 2001; Microsoft Industry Perspectives, 2002). For example, in health care the teamwork is often interdisciplinary and may occur at many different levels as well. The wide variety of professional and occupational specialties in health care must interact with one another. (Adamson, Lincoln, & Cant, 2000; Dolan, 2002; Higgs & Hunt, 1999).

Socialization and collaboration in the workplace generally implies shared challenges or responsibilities over which a group might take ownership and thus share in the workload. Since jobs are commonly interdependent, employees are also interdependent (Overtoom, 2000). As both communication and information are more readily available, the boundaries between occupations will, and already are, fading, requiring a broader base of skills. Job-specific technical skills in a given field are no longer sufficient as jobs become increasingly interdependent (Overtoom, 2000; Van der Linde, 2000). As technology continues to impact the workplace, workers will be required to develop new skills. These newly learned skills may then run the risk of becoming obsolete very quickly, hence – "throwaway skills" and "throwaway workers" (Van der Linde, 2000). If workers can direct their own learning to meet new challenges, they may be capable of meeting the ever changing and accelerating demands of the workplace (Overtoom, 2000; Van der Linde, 2000; Wonacott, 2002). Again, the knowledge worker

who can adapt to change, function in a team, continually learn and communicate with others will be best equipped for the future workplace (Overtoom, 2000; Wonacott, 2002). In these workplaces, it is critical that workers have a sense of the importance of communicative tasks such as speaking, listening, observing, writing and reading along with a basic proficiency in communication via technology.

The Multicultural Perspective

The sheer volume of differences among individuals in the workplace has never been greater. Workplace communication is directly impacted by the variety of differences and the comfort levels surrounding cultural diversity and vice versa (Husting, 1995). "Broadly defined, cultural diversity can be understood as differences in age, ethnic heritage, gender, physical ability and qualities, religious belief, and sexual/affectional orientation" (Arai, Wanca-Thibault, & Shockley-Zalabak, 2001).

Godinez and Kleiner (2000) reported a study by Carr that concluded: "In 1999, the demographic face of America is a follows: 72.7 percent White, 11 percent Hispanic, 12.1 percent Black, 3.6 percent Asian/Pacific Islander, and 0.7 percent American Indian " (p. 78). Several sources have projected that within 50 years those numbers will shift such that the Anglo or White will decrease by about 25 percent, while the Hispanic population will increase by 25 percent, with the other groups making moderate increases (Godinez & Kleiner, 2000; Huerta-Macias, 2002) . Huerta-Macias (2002) stated, "It is estimated that Spanish is the first language of approximately 93 percent of U.S. Latinos, now making the United States the fifth-largest Spanish-speaking country after Mexico, Spain, Argentina, and Colombia" (p. 1). The demand for courses supporting English as a

Second Language (ESL) has already outstripped availability all across the country (Huerta-Macias, 2002). Without a functional grasp of English, individuals in this country are more likely to be restricted to low pay, low skilled or no employment at all (Boyle, 2001; Huerta-Macias, 2002).

With the most critical of the one-to-one interpersonal communication skills being reading, writing, speaking and listening (U.S. Department of Labor, 1991), language differences pose an obvious barrier to workplace communication. Verbal and non-verbal cues can each take on complex variations when the workers originally speak languages other than English. Aside from issues of vocabulary and interpretation there are also factors such as accent or pronunciation, level of formality, gender, age, spatial relationships, value of time, etiquette, and socialization styles that might impede workplace communication (Arai, Wanca-Thibault, & Shockley-Zalabak, 2001; Dong & Kleiner, 1999; Husting, 1995; Lavaty & Kleiner, 2001; Manion, 1998; Sabo, 2000; Verderber, 1999).

These issues become magnified when applied to the collaborative group environment where the nuances of several languages and cultures may be attempting to mingle alongside workplace goals, while the skill sets of knowledge workers become all the more complex. Customs, values and priorities must be recognized within their context of the original culture if the attributes of diversity are to be appreciated for their potential. Since language is very much a product of culture, ethnic heritage will profoundly influence the interactions between fellow workers (Arai, Wanca-Thibault, & Shockley-Zalabak, 2001; Manion, 1998; Sabo, 2000; Verderber, 1999).

The geo-political landscape is also changing dramatically, and largely due to the impact of technology with the increased availability of communication and flow of information. In the future the world economy is predicted to be based not as much on products but largely on knowledge work (Harris, 1996). With knowledge work, the use of technology will tend to make geographic and political boundaries almost obsolete. The accessibility to information will beget more information, which will then beget autonomy, empowerment, synergistic working relationships, and increased productivity. These will then lead to greater demands for quality work lives, greater demands for technical skills, more research and development and more entrepreneurial growth (Harris, 1996).

Countries are becoming more interdependent with respect to goods and capital as people travel more freely. However, there will probably always be cultural barriers. Organizations must encourage cross-cultural adaptation by recruiting a variety of workers as well as providing cultural awareness training. Workers will need to learn more about other cultures and mindsets of peoples in other countries while working on intercultural communication skills (Pan Suk Kim, 1999).

Aside from racial and ethnic differences that affect workplace communication, gender differences create additional variations to interpersonal interactions. Not unlike cultural differences, elements of interpersonal communication such as verbal and non-verbal messages can have gender-based variations depending on the perceptions of the person sending the message and the perceptions of the person receiving the message (Verderber, 1999). The interpretation of a communication cue is as critical as the original intent, and each can be affected by or stereotyped as having a gender bias. Examples of

issues that can affect interpersonal communication stemming from gender differences might be emotion, sexuality, perceptions of power, perceptions of authority, concern regarding how one is perceived by others, past or shared experiences, trustworthiness, skills or biases in reading social cues, personal identity, and attitudes toward others (Hale, 1999; Herrick, 1999; Verderber, 1999). A study conducted in 2000 by Soni found that white males were significantly less likely to be positive toward diversity in the workplace than females and minorities. However, Hale (1999) as well as Verderber (1999) both cautioned that stereotypes regarding gender that tend to characterize all members of one group alike may be inaccurate in their generalizations.

Age, another source of diversity in the workplace, impacts work and work groups via the differences in attitudes, self-perceptions, values, and vocabulary (Cordeniz, 2002). In the information age, technology has applied increased pressure on age variations in the workplace. The Baby Boomers, Generation Xers and now the Net Generation are all present together in the workplace (Cordeniz, 2002; Tapscott, 1998). Generalizing the approximate age groups, the Baby Boomers are those above age 40-ish, Generation X ranges from the late 30's through mid-20's, and the Net Generation are the early 20's and younger (Cordeniz, 2002; Tapscott, 1998). These three groups have been said to have developed characteristics due to economic and historical events associated with their generations. In describing Baby Boomers who come more often from strong nuclear families Cordeniz (2002) stated, "This group equates work with self-worth, contribution, and personal fulfillment" (p. 2). By contrast, Generation X more often come from the homes of single-parent households and were latchkey kids. With their earlier exposure to technology, this group tends to expect a high degree of satisfaction

with instant responses. They are also characterized as being self-absorbed, lacking basic skills in reading and communication, but are also capable of being independent, resourceful, industrious and accepting of diversity (Cordeniz, 2002; O'Bannon, 2001).

In his book *Growing up Digital*, Tapscott (1998) described the Net Generation (or N-Gen) as having grown up with computers and the Internet in their lives. This group is characterized as "accepting of diversity, curious, assertive, and self-reliant" (Dorman, 2000, p. 1). Tapscott emphasized that one difference between this group and previous groups is their demand for an interactive environment. Using a computer, this group can explore any issue or product, shop, keep up on current events, and communicate with other individuals and groups around the globe. They know few limits or barriers, except those caused by poor bandwidth. While previous generations have devoted their time to television, media controlled and programmed by hidden strangers, N-Geners are more likely to choose media they can construct for themselves. They are proficient with hardware and software and are quite capable of accessing information for themselves. "This shift from broadcast to interactive is the cornerstone of the N-Generation. They want to be users—not just viewers or listeners" (Tapscott, 1998, p. 3). Papert (1996) emphasized the inexhaustible source of feedback that can be used for learning through technology, and how with exploration being self-motivating activity, young people take control of their own learning. In a survey of the top online activities performed by a group aged 16-22, 96% communicated via email, 69% used instant messaging, and 52% kept up with current events via the Internet (Lach, 2000). The characteristics of this age-group are dramatically different from their predecessors, bringing an entirely new culture into the workplace.

Changes in Interpersonal Communication with the Influence of Technology

In our not-so-distant past, most information was contained on paper. Interpersonal interaction was conducted either in person, over the telephone, or by writing letters that were then hand carried across distances. Workplace communication skills, therefore, included reading, writing, speaking and listening within very limited parameters. Technological advances have created many new avenues for communicating, and now information is stored in limitless quantities in digital format while communication is electronic.

One of the older and more common communication technologies is voice mail. Davidhizar and Shearer (2000) discussed in detail the importance of this commonplace tool stating, "Voice mail is a medium of modern technology that can enhance managerial speed and cost effectiveness" (p. 1). They described several rather obvious yet critical elements that can impact the effectiveness of voice mail such as the lack of non-verbal communication or body language, voice quality, speed, word choice and the use of limited time.

The use of electronic mail (email) has become a vital communication tool in the workplace, replacing other forms of interaction such as the telephone and standard mail. The Pew Internet & American Life Project recently published a report titled *Email at Work* (Fallows, 2002), which took an in-depth look at the use of this communication vehicle. In this report, the impact and necessity of email in the workplace can quickly be appreciated as it stated, "Email is an integral part of American workers' lives. About 62% of all employed Americans have Internet access and virtually all of those (98%) use email on the job" (p. 1). This report stated:

> Those who use email at work say their electronic communications mostly contain content that is highly valuable to their work. Fifty-two percent of them rate their email as being 'essential to their work,' and an additional 34% rate it as moderately important. (Fallows, 2002, p. 2)

The proper use of email at work, volume management, ethics, and impact on various interactive work relationships are points that must be learned by workers relative to industry or shop standards. Workers must adapt to certain written and unwritten rules involving content, message volume, language, abbreviation use, confidentiality/security, and virus protection, to name a few topics of concern (Chisholm, 2003). Mailing lists, listservs, and discussion boards or groups can all serve to enhance communication, cooperation and collaboration in the workplace if used appropriately (Fallows, 2002; Powell, 2003).

Another important communication technology is instant messaging (IM), in use since 1996 (Huang & Yen, 2003). Kirsner (2002) stated that email will rate second to IM in frequency of use in the near future. The valuable aspects of IM are that it is a synchronous mode of communication, it can link individuals in a variety of locations, it increases collaboration among workers, it can be a casual form of communicating, it can decrease costs, especially telephone bills, and there is little to no message delay time (Chen, 2003; Huang & Yen, 2003; Kirsner, 2002). Further emphasizing the value of IM, Kirsner stated, "Questions get answered immediately, ad hoc discussions and debates take place online instead of during meandering in-person meetings, and small problems are solved before they have the time to turn into big problems" (2002, p. 3).

Wireless networking technology, Wi-Fi for short, and the increased availability of broadband technology are removing the concept of fixed location from the workplace (Schrage, 2000; Stone, 2002; Tynan, 2002). Equipped with laptop computers and linked to networking software, an employee can function anywhere at any time. Tynan (2002) referred to the "workplace without walls – and a workday that never ends" (p. 2). This mobility allows improved inter- and intra-office collaborations to take place. The increased availability and affordability of broadband technology is allowing larger quantities of data to be shared via technology (Schrage, 2000; Tynan, 2002). Video-conferencing or video-monitoring at a distance is bringing people closer together in space and time (Schrage, 2000). Eric Janszen, CEO of Bluesocket, a manufacturer of wireless LAN (local area network) security appliances stated, "People have gotten used to the idea that you don't have to be in the office to get work done. You go to the office to maintain relationships" (Tynan, 2002, p. 2).

The impact of technology on communication in the workplace has allowed for the development of work teams whose members are located in a variety of geographical locations. In the information technology profession "virtual development teams" are coders who are geographically dispersed, but who collaborate through shared web-based tools (Fournier, 2001; Johnson, Heimann & O'Neil, 2001). Microsoft Industry Perspectives (2002) recently reported on use of technology by workers in the governmental sector stating, "Because a single government employee rarely performs an entire public service process, staff must be able to collaborate and work as a team, moving smoothly between different documents and databases on a variety of back-end systems" (p.1). The Microsoft document went on to say, "Technology enables

employees to collaborate and work for wider government objectives rather than narrower departmental goals" (p. 3).

Email, instant messaging, electronic chat, list servs and discussion boards all contribute to teamwork and collaboration between varieties of workers. However, Fournier recommended caution about technology when he stated:

> You can't rely on the shared sense of understanding that regular face-to-face contact tends to foster. Without a common frame of reference, collaboration and communication between the dispersed team members may be disordered and inefficient, and developers may not appreciate the impact their activities have on the rest of the group (2001, p. 2).

Similarly, Dickerson warned:

> Wireless technologies promise to link teams more efficiently, but managed improperly, they erode the basic fabric of business: human interaction. I've heard that the ability to hold somebody's attention is the most valuable currency in today's world, and if we're not careful, wireless could make us all a little poorer (2003, p. 2).

As discussed here, the workplace is already seeing a transformation such that the boundaries between work and home are becoming blurred. Work is becoming a 24/7 venture. Work will not be, and is not limited to, a set space or place anymore (Stone, 2002; Tynan, 2002).

Since so much information is now so readily available, it is necessary to be able to discern the legitimacy of sources. In the past, anything that appeared in a newspaper or

television was believed to be truthful and have value. However, with the information explosion it is important to qualify information sources. Tapscott (1998) described this as almost second nature to N-Geners, claiming that, "Among the things they look at are writing styles and production values" (p. 77). Close examination of the universal resource locator (URL) or the address where a website is located can give clues as to the source or quality of the information. Search engines are excellent sources by which information can be cross-referenced, as can email to an expert in a field (Tapscott, 1998). The authentication of information is another valuable skill that must be learned, and technology makes this process immediate as well.

The old organizational models in which executives made decisions and workers worked are disappearing along with the old slower methods of communicating. It was previously pointed out that companies are downsizing or flattening their organizational hierarchies, shortening the distance between the executives and the workers. This is requiring the blending of responsibilities for managers and workers alike, increasing the need for effective communication skills, and increasing the need for virtual teams that communicate via technology (Ganzel, 2001; Johnson, Heimann, & O'Neil, 2001; Joyner, 2002; Sabo, 2000). With the empowerment of the individual due to the ability to initiate communication and access to information comes a great deal of power. Tapscott (1998) claimed that "Dilbert sums up well what many of us have been saying for years: the old model of enterprise cannot work in an economy driven by innovation, knowledge, immediacy, and internetworking" (p. 210). Tapscott went on to describe several qualities of the Net Gen which will begin to mold a new future for business and government organizational structures, all due to the impact of technology on

communication, thinking and learning. The qualities identified by Tapscott include independence, autonomy, openness, collaboration, internetworking, the creation of learning organizations, a culture of innovation, investigation, immediacy and real-time adjustment to change, corporate skepticism and a culture of trustworthiness (pp. 211-216). Interpersonal communication is apparently not the only change that will occur in the workplace as a result of technology.

Interpersonal Communication and College Classroom Teaching and Assessment Methods

Educators in workforce development programs must adapt to meet the demands of preparing workers of today and tomorrow. Gray and Herr (1998) described a dual mission of workforce education:

> One is to promote individual opportunity; the other, though not necessarily the second in importance, is to promote economic growth by solving human performance problems and thereby increasing productivity. (p. 21)

Classroom Teaching and Interpersonal Communication

While some college instructors may not be well versed in teaching methodology or instructional design techniques, they are themselves products of their own workplace and aware of the required performance criteria. Often instructors gravitate toward teaching techniques by which they themselves were taught, typically the traditional lecture method, with the instructor imparting information to the student in a one-way only transmission mode (Bonwell, 1996; Bonwell & Eison, 1991). This has been viewed as problematic:

> It is no longer sufficient for the college professor to be competent in a field of specialty and to "profess" a substantial base of knowledge to a classroom full of willing students. Today's effective college teachers must be prepared not only to share in-depth knowledge of their discipline but also to know something about college students and how they learn. Faculty are also expected to cultivate skills in different methods of teaching and assessment—areas in which they have had little or no preparation (Bonwell & Sutherland, 1996, p. 3).

In order to fully meet the demands placed upon adult occupational education, the literature presents support for the basic principles of adult education most often based on the andragogical model of Malcolm Knowles (1998). This model describes adult learners as individuals who:

1. need to understand why they need to know material they are learning,
2. are self-directed and need to be recognized as such,
3. already possess experiences to which new learning can be added,
4. are ready to learn and ready to apply their learning,
5. choose to learn that which they can use to solve real problems, and
6. tend to be more internally motivated rather than externally motivated (Knowles, 1998).

Fidishun (2000) described Lawler's set of keys to adult learning as having included the importance of understanding and minimizing learner anxiety, accounting for student experiences and expectations, creating opportunities for learner participation, and the construction of relevant learning experiences. These principles are largely consistent

with those of Knowles. Fidishun went on to describe how these principles could be applied to teach adults to interact with computerized sources of information, an important skill in the workplace.

The andragogical model is consistent with the humanistic philosophy of adult education in emphasizing self-directed learning, autonomy and active cooperation. Malcolm Knowles and Carl Rogers are both associated with the humanistic philosophy and with student- or learner-centered teaching (Elias & Merriam, 1995; Knowles, 1998). Other philosophies of adult education which might come into play include the liberal philosophy with its classical Greek roots, the progressive philosophy focusing on education and its role in society, the behavioral philosophy centering on control and behavior modification, as well as the consciousness-raising philosophy of Freire (Elias & Merriam, 1995). Bruner was a proponent of the discovery method or self-directed learning, while Bandura focused on teaching by modeling as a part of social learning (Knowles, 1998).

Once in tune with the needs of the learner, further steps associated with designing instruction involve the formulation of instructional goals as associated with learners' needs while giving careful consideration to the characteristics of the target audience and the context of the learning sessions (Dick & Carey, 1996). Other important factors include the characteristics of the instructors, the potential for the transfer of learning to the environment where it will ultimately be needed, the time and resources allotted for the instruction, as well as the potential for altering the instructional delivery methods (Caffarella, 2002; Smith & Ragan, 1999).

Another key element to consider in occupational education with respect to designing instruction is student learning style and how these may vary within any group of students (Brookfield, 1990; Mentkowski, 2000). Identifying, teaching to, or teaching contrary to a student's learning style could each be used to impact the demonstrated communication skills of adult learners (Brookfield, 1990). In keeping with student differences, it is important to assess the initial skill levels and characteristics of the students and design instruction that will assist students to meet the needs of the workplace (Dean, 2002).

Cafarella (2002) recommended that the selection of specific teaching methods should be in keeping with the learning objectives and intended learning outcomes and listed a variety of instructional techniques, all grouped according to several classic learning outcomes. For example, instructional methods useful in acquiring knowledge might include lecture, face-to-face discussion groups, or email. Methods suggested for enhancing cognitive skills might include case studies, debate, or skill practice exercises (Caffarella, 2002). That is not to say that an instructional method useful for one learning outcome would not be useful for other learning outcomes as well, but some methods do present a better fit than others. Examples of different learning outcomes include verbal skills, attitudes, motor skills, or problem-solving aside from cognitive skills or acquiring knowledge (Caffarella, 2002; Dick & Carey, 1996).

With a focus on interpersonal interaction in the college classroom present in the literature, attention has been paid to the relationship or degree of interaction between as many parties as might be available. Again, a common instructional strategy employed in the college classroom has been the lecture method where the nature of the interaction has

been typically instructor-controlled while the student remains at least somewhat passive. This method can be useful for tasks such as disseminating a collection of facts or series of events, outlining a body of material, setting guidelines, or modeling an intellectual process, and can benefit large audiences or students who prefer learning by listening (Bonwell, 1996; Brookfield, 1990; Caffarella, 2002). While the lecture technique has been most commonly used and most commonly criticized due to the apparent lack of student involvement, Freire stated:

> A liberating teacher will illuminate reality even if he or she lectures. The question is the content and dynamism of the lecture, the approach to the object to be known. Does it critically re-orient students to society? Does it animate their critical thinking or not? (Shor & Freire, 1987, p. 40).

Brookfield (1990) concluded that, "A misused method calls into question the expertise of those misusing it, not the validity of the method itself" (p. 72). While the lecture method is only one such technique of instruction, the classroom interaction goals should be met by providing a variety of learning experiences specifically tailored to meet the needs of the adult learner who anticipates entering into the workforce requiring a specific set of skills.

One method found in the literature regarding the improvement of interpersonal communication skills was a program called New Standards, a nationally based plan for creating performance standards in oral communication in K-12 education (Rubin & Hampton, 1998). This program placed a high priority on creating opportunities for individual learners to speak, listen, and view or observe throughout many content areas.

The high school portion of this plan included categories of skills based on expectations such as individual conferencing between students and faculty, small group student work, individual student presentations, student critique of media events, and student critique of public speaking performances (Rubin & Hampton, 1998).

Another method described by Strom & Strom (2002) is the Cooperative Learning Exercises and Roles, or CLEAR. This method consists of a set of twelve predetermined roles which participants would assume while contributing to the accomplishment of a task or project. These roles include titles such as Summarizer, Reader, Challenger, Organizer, Evaluator, Improvisor and Storyteller, to name a few. Students would exchange roles over time so as to broaden their group interaction experiences.

Barrett (2002) described a Rice MBA communication program incorporating tactics such as individual instruction and one-on-one coaching combined with individual assessment to improve writing, speaking and listening skills. Merwin (2002) suggested incorporating informal writing exchanged between instructors and students, engaging students in interpersonal in-class demonstrations, and the careful use of empathy and humor to engage students more fully. Jensen and Davidson (1997) suggested having an instructor who might be a "lectureholic" come to grips with control issues, recognize that students do not all learn in the same manner, alter seating arrangements and engage the class in more learner-centered activities.

With respect to the skills already described as common to interpersonal communication, a few specific strategies have been proposed in education and workforce-preparation literature. Many of the strategies involve either cooperative or collaborative efforts of students and are in keeping with the principles of adult education

proposed by Knowles (1998). Lutz (1999) described her use of collaborative writing groups and peer groups as an effective strategy in a business communication classroom where students exchange critiques of one another's written work. These students are also asked to collaborate in their collective critique of the university's sexual harassment policy, reflecting on the relevance of the policy to their own experience. Panitz (1996) described collaboration as the presence of a shared sense of authority and responsibility where consensus building is key. He went on to describe cooperative learning as being "defined by a set of processes which help people interact together in order to accomplish a specific goal or develop an end product which is usually content specific" (p.1). Another source described the characteristics of a collaborative classroom as comprising shared knowledge between teachers and students, shared authority, teacher mediated learning, and the heterogeneous grouping of students so that each student has a rich and full opportunity to contribute and learn (Tinzmann, Jones, Fennimore, Bakker, Fine, & Pierce, 1990). In a 2002 study, Brooks and Khandker experimented with a collaborative learning lab where they determined that the effectiveness of the collaborative learning class decreased as class size increased in reference to standardized test scores. Brooks and Khandker (2002) referenced a study performed by Moore in 1998 in which it was found that student scores on a standardized exam were significantly improved after having participated in a collaborative learning lab.

Herreid (1998) also described the benefits of small group activities as they apply to the teaching of science which promoted academic and interpersonal skills through cooperative learning. Another example of cooperative and peer learning in the classroom was provided by Cooper (2002) who discussed the value of transferring the responsibility

for the acquisition, organization, and application of knowledge from the teacher to the student, allowing the teacher the opportunity to model learning and problem-solving strategies. Vermette and Erickson (1996) provided an in-depth description of cooperative learning for the college classroom to include principles applying to the grouping, grading and governing of small groups. He went on to describe a seven part taxonomy relating to the design of group learning activities.

Other studies in support of group teaching strategies applied to classroom work have been reported by Brown, (2001), Henschen and Sidlow (1990), MacLeod (1999), McIntyre-Birkner and Birkner (2001), Munilla and Blodgett (1995), Johnson and Johnson (1994), Pennington (1992), and van Boxtel, van der Linden and Kanselaar (2000). These studies all emphasized the value of reading and writing in collaborative exercises while practicing elements associated with teamwork such as listening, tolerance and respect.

Other studies referring to the development of interpersonal communication with a particular focus on workplace skills have come from the fields of business education, software engineering education, engineering education, and general workplace education. Holter and Kopka (2001) described a multidisciplinary model for emphasizing communication, teamwork, problem-solving, writing and other professional concerns as they apply to several disciplines within the business community. To accomplish these objectives, they developed a single course to be team-taught and include the in-class rehearsal and presentation of job interviews and various team activities. This study described the importance of manipulating the physical classroom environment to facilitate a variety of team projects and/or student presentations. Saiedian (2002) described team-oriented software development projects to help students develop

collaborative skills. Palmer (2001) described the Deakin School of Engineering and Technology's undergraduate program in Australia which incorporated a curriculum emphasizing the use of technology for two-way communication between faculty and students. Palmer reported that "Flexible learning materials take advantage of all available media including face-to-face lecture for on-campus students and those off-campus students that can attend, print-based materials, video and audiotapes, home experimental kits, CD-ROMs, residential sessions, computer programs and simulations, teleconferencing, email and the Internet" (2001, p. 6).

Davis and Miller (1996) examined workplace skills and their availability in education. Their research led them to recommend an emphasis on a broad range of interpersonal communication skills with attention to group and teamwork skills. They stated, "How to encourage teamwork and cooperativeness while maintaining a degree of individualism is a critical issue. Students have long been socialized to 'doing their own work'" (p. 2). They recommended care in grading policies with attention to individual contributions as a means of improving group work.

Specific activities that can vary the opportunities for interpersonal interaction in the classroom have been described as including small-group panel discussions, demonstration, sharing of traditional or electronic journaling, email, listservs, asynchronous online forums, real-time Internet chats, audio and video conferencing, taking notes of an observational opportunity, games, skill simulations, reflective practice, role playing, or storytelling (Caffarella, 2002; Johnson & Johnson, 1994). According to Cinelli, Symons, Bechtel and Rose-Colley (1994), structured activities designed to enhance cooperative participation in allied health education include exercises such as

Round Robin, where students take turns sharing; Think-Pair-Share, where students consider an issue individually before sharing with a classmate and then reporting to the class; and Pairs Check, where pairs of students alternate as problem-solvers and coaches, then switch partners with another pair to compare.

Methods for facilitating interaction in the classroom and workplace can be fostered through the use of personality or behavior assessment tools such as the Myers-Briggs Type Indicator® (Myers & Briggs Foundation, 2002); the Personal Profile System® (Goodman, 2003), also known as the DiSC Dimension of Behavior; the Interpersonal Intelligence Inventory (III) developed by Strom and Strom (2002); the Collective Effort Classroom Assessment Technique (CECAT) (Walker & Angelo, 1998); and the Generalizable Interpersonal Relations Skills Assessment (Greenan & Winters, 1991 as cited by Barker, 2002). Another tool was developed by physical therapy educators at the University of Wisconsin-Madison to assist students in the development of their generic abilities, or soft skills such as interpersonal and communication skills (May, Morgan, Lemke, Karst, & Stone, 1995). The Myers-Briggs test has long been used in the corporate and educational settings. The authors of the III claimed that the use of this tool could "identify the teamwork skills individual students demonstrate" and "detect individual and group learning deficits to guide instruction" (Strom & Strom, (2002, p. 319), among a list of purposes beneficial to students and faculty. The CECAT is comprised of 20 statements relating to an ongoing group process which participants are asked to rate on a one to five scale, with five being "strongly agree", and can be used as both formative and summative feedback. Tools such as these can give insight into how

an individual might choose to interact with others. The literature supporting each of these tools provides evidence of both reliability and validity.

From the multicultural perspective, a quasi-experimental study was conducted by Barker (2002) on the use of a cross-cultural curriculum in a secondary vocational program. According to the study it was determined that the use of this curriculum was effective in improving interpersonal relations skills of students. Instructional unit topics available to the experimental group during this study included cross-cultural concepts, social roles, relationships, teamwork principles, as well as values and attitudes. Judging by the results on pre- and post-test scores on an instrument known as the Generalizable Interpersonal Relations Skills Achievement, the control group who did not receive cross-cultural instruction did not have a significant improvement on the post-test, whereas the experimental group did.

While the literature does strongly support the enhancement of interpersonal communication skills in the classroom, there is also evidence that care should be taken when making such activities a requirement. Hopper (2003) wrote a cautionary message, illuminating the less positive aspects of interpersonal communication in the classroom. His concerns included the assumption that every student is gaining knowledge from a group activity and that teachers are capable of being all-knowing or all-seeing during their observation of group activities, thus observational assessments may be wholly inaccurate. Hopper was also skeptical of the practice of having students prepare and present classroom presentations using multimedia, stating that "Unless multimedia development is an instructional goal, there is no compelling instructional advantage in students developing PowerPoint presentations to show one another" (Hopper, 2003, p.

25). Salomon (2002) also questioned the unwarranted expectations of technology in the classroom, stating that "Learners are to learn *from* the technology, but its uniqueness as a tool of construction, creation, communication, and design to learn *with*, not from is still suppressed" (p. 72).

Although the evidence is overwhelming that students need to be prepared to compete in a workforce where interpersonal skills are critical, Hopper (1999) brought up another excellent point by implying that the use of collaborative learning should remain in keeping with course goals. While the intent of a collaborative activity should be focused, the students should also not be expected to gain knowledge from one another when that knowledge should be available from an informed expert such as a teacher.

Hopper (1999) raised an even stronger caution regarding the emphasis on interpersonal communication in the classroom in his discussion regarding social anxiety disorder (SAD), stating that students with this disorder may not be equipped to handle collaborative learning environments. Formally termed as "social phobia", this disorder takes shyness to a much higher level by invoking feelings of intense anxiety or extreme fear during social situations (American Psychiatric Association, 2000; Antony & Swinson, 2000; Dayhoff, 2000; Hopper, 1999; Schlozman, 2002; Thackery, 2003). According to the American Psychiatric Association's current version of *Diagnostic and Statistical Manual of Mental Disorders, (DSMV-IV-TR, 2000)*:

> The essential feature of Social Phobia is marked and persistent fear of social or performance situations in which embarrassment may occur (Criterion A). Exposure to the social or performance situation almost invariably provokes an immediate anxiety response (Criteria B).

> This response may take the form of a situationally bound or situational predisposed Panic Attack (see p. 430). Although adolescents and adults with this disorder recognize that their fear is excessive or unreasonable (Criterion C), this may not be the case with children. Most often, the social or performance situation is avoided, although it is sometimes endured with dread (Criterion D) (p. 450).

The *Gale Encyclopedia of Mental Disorders* states:

> In any given year, social phobia affects 3.7% of the American population between the ages of 18 and 54, or about 5.3 million people. It is the third most common psychiatric condition after depression and alcoholism. Patients diagnosed with social phobia have the highest risk of alcohol abuse of all patients with anxiety disorders; in addition, they suffer from worse impairment than patients with major medical illnesses, including congestive heart failure and diabetes (Thackery, 2003, p. 904).

The *DSMV-IV* goes on to describe several features of Social Phobia as taking the form of poor eye contact, shaky voice, and "avoidance of classroom participation" (p. 452). Critical implications of this disorder as it comes into direct conflict with the need to increase opportunities for interpersonal communication in workplace education involve the following:

> In more severe cases, individuals may drop out of school, be unemployed and not seek work due to difficulty interviewing for jobs, have no friends or cling to unfulfilling relationships, completely

> refrain from dating, or remain with their family of origin. Furthermore, Social Phobia may be associated with suicidal ideation, especially when comorbid disorders are present (American Psychiatric Association, 2000, p. 452).

A critical element linking this disorder to the educational setting was highlighted in the *Gale Encyclopedia of Mental Disorders* in stating, "One sample of patients diagnosed with social phobia found that almost half had failed to finish high school; 70% were in the bottom two quartiles of socioeconomic status (SES); and 22% were on welfare" (Thackery, 2003, p. 906).

Recommended treatment of social phobia is medication and/or psychotherapy, with a good prognosis for recovery if treated (Thackery, 2003). However, if left untreated, "social phobia can become a chronic, disabling disorder that increases the patient's risk of suicide" (p. 909).

In a chapter titled "Social Dysfunction in the Workplace" for the *Handbook of Mental Health in the Workplace*, Ham, Van Dyke and Hope (2002) acknowledged the heightened emphasis on team building and interpersonal communication skills in the workplace as well as the difficulties associated with social phobia. The authors recommended possible solutions to the work-related problem such as social skills training, opportunities for rehearsal, feedback, and homework.

As demonstrated in this review of the literature on classroom teaching methods, there are many avenues for increasing the variety of educational opportunities for students. No one method is claimed as superior, nor does any source recommend a single method for success. Therefore, if the principles of adult education hold true, then varying

the opportunities for interpersonal interaction might in some cases be more successful for some student needs, if the original goal of adult occupational education is geared toward the success of its students.

Classroom Assessment and Interpersonal Communication

Instructional assessment as it applies to interpersonal communication in the classroom takes on a variety of forms. Discussions of assessment often relate to the quality of student performance following instruction (Angelo & Cross, 1993; Caffarella, 2002; Coyle, 1993), but assessment might also apply to the quality of the instructional method as an effective technique (Angelo & Cross, 1993; Brooks & Khandker, 2002), or to the perceptions of either students or faculty with respect to the success of a learning opportunity (Roy & Elfner, 2002). Whether the assessment is meant as a formative or summative element of instruction is also important. "Evaluation done to improve or change a program while it is in progress is termed formative evaluation. When evaluation focuses on the results or outcomes of a program, it is called summative evaluation" (Caffarella, 2002, p. 225). Formative assessment can be used as much as a diagnostic tool as for assigning a grade to performance (Cooper, 2002).

Ongoing classroom assessment is not only a tool for measuring student progress, but also for providing instructors with some perspective on their teaching and instructional design. Angelo and Cross (1993) reported that "Another lesson we learned from faculty is that student responses to Classroom Assessment Techniques frequently surprise them, often challenging their unexamined assumptions" (p. 371). Such

assumptions may involve the relevance of course content or the effectiveness of an instructional strategy.

One consistently held premise is that assessment should follow the original learning objectives or teaching goals (Angelo & Cross, 1993; Caffarella, 2002; Dick & Carey, 1996; Smith & Ragan, 1999). Not unlike the variation in choices made as to method for the delivery of the instruction, the choices of the method of assessment may vary according to the learning outcome (Caffarella, 2002). A few examples of assessment techniques as they apply to student demonstration of interpersonal communication skills might include observation, oral tests or presentations, interviews, skill performance, audio or video presentation, computer-based simulations, role playing, or a portfolio of collected works (Angelo & Cross, 1993; Caffarella, 2002; Coyle, 1993; Smith & Ragan, 1999). Dick & Carey (1996) offered a sample of a checklist of positive behaviors which can provide a frequency count based on student performance (p. 164). These examples could be used in either formative or summative assessment.

Vermette and Erickson (1996) emphasized the importance of fair grading of cooperative learning experiences which recognize both the contributions of each individual student and the accomplishments of the student group. Several examples offered included testing students individually and offering bonuses based on the level of overall group achievement. A variation on this method was described as having a portion of the test accomplished by the collaborative group while another portion was completed by each individual. The authors stated,

> Interestingly, some learners who score much better on collaborative assessments than they do on purely individual exams are more

> effective in the real world of work. This type of social test recognizes and respects that type of ability and evaluates learning in a much more authentic manner (p. 5).

Other grading examples provided by Vermette and Erickson (1996) included the overall group grade that is distributed equally to all group members, or the group grade supplemented by an individual grade for individual accomplishment. Herreid (1998) recommended against group grading unless peer evaluation was included.

Other examples of assessment of interpersonal communication skills of students included peer assessment where students gave feedback directly to one another following any variety of classroom learning activities. According to several authors, before or after writing assignments, skill performances, and responding to written questions were all opportunities for peers to critique one another's performance (Bonwell, 1997; Herreid, 1998; MacLeod, 1999). Coyle (1993) recommended the use of video to record and assess interpersonal communication skills as well.

The literature provided examples of how methods of assessing the quality of the instruction can be drawn from the examination of student progress based on classroom assessment results or by the use of standardized instruments. Brooks and Khandker (2002) compared final exam scores of students who were provided collaborative learning experiences in either large or small group settings and compared the results. At the conclusion of this study it was found that students from the large group collaborative setting did not perform as well on a standardized test as students in the small group collaborative setting. Barker (2002) used the Generalizable Interpersonal Relations Skills Assessment in the pretest/posttest design with experimental and control student groups.

Experimental groups were provided with cross-cultural instruction and the control group was not. While the experimental and control groups were considered equivalent in their interpersonal skills by the pretest, the experimental group showed significant improvement in its interpersonal skills compared to the control group on the posttest.

Several authors have found value in examining student preferences as assessments of classroom teaching methods. Roy and Elfner (2002) surveyed undergraduate students taking business classes to determine "how students perceive the use of IT [instructional technology] as it relates to student-to-student interaction, and student-to-instructor interaction" (p. 274). In this study a seven-point scale with seven meaning "very satisfied" was used to rate statements pertaining to instructional technology. The highest ratings were received by web searching, word processing and email. Students were also asked to use a five-point scale to rate the extent to which their use of instructional technology had increased with five being "a great deal". The availability of information received the highest rating in this section. In another study, Young and Shaw (1999) attempted to examine teacher effectiveness according to student ratings. "It was not a surprise that effective communication, a comfortable learning atmosphere, concern for student learning, student motivation, and course organization were found to be highly related, as a group, to the criterion measure of teacher effectiveness" (Young & Shaw, 1999, p.6).

Integration of Communication Skills into WFD Programs

There are a number of factors that may contribute to curriculum development in workforce development programs at the community college level. These could include federal and state legislation, particularly as it is tied to educational funding or

occupational licensing; the requirements dictated by employers and accreditation bodies representing specific occupational specialties; and occupational duty task lists.

The Impact of Federal Legislation

The Workforce Investment Act (WIA) of 1998 (Public Law 105-220), signed into law on August 7, 1998, provides funding to students who apply for assistance in attending approved workforce preparation training programs. This law contains expectations that interpersonal and communication skills will be included in each program of study as applicable to the occupational requirements. The WIA does not go any further to describe specific skills or performance criteria for these skills, but leaves this duty to the discretion of each state. The WIA describes a set of "core indicators of performance" associated with successful training funded by this Act as:

(I) entry into unsubsidized employment;

(II) retention in unsubsidized employment 6 months after entry into employment;

(III) earnings received in unsubsidized employment 6 months after entry into the employment; and

(IV) attainment of a recognized credential relating to achievement of educational skills, which may include attainment of a secondary school diploma or its recognized equivalent, or occupational skills, by participants who enter unsubsidized employment, or by participants who are eligible youth age 19 through 21 who enter postsecondary education, advanced training, or unsubsidized

employment. (Workforce Investment Act of 1998, Public Law 105-220, August 7, 1998, Section 136, (b) (2) [i]).

The only other measure of performance accountability under this law is the customer satisfaction indicator whereby employers of persons provided training under the WIA may be asked for input regarding employee performance.

> The customer satisfaction indicator of performance shall consist of customer satisfaction of employers and participants with services received from the workforce investment activities authorized under this subtitle. Customer satisfaction may be measured through surveys conducted after the conclusion of participation in the workforce investment activities. (Workforce Investment Act of 1998, Public Law 105-220, August 7, 1998, Section 136, (b) (2) (ii) [B]).

This law does say that, "A State may identify in the State plan additional indicators for workforce investment activities authorized under this subtitle" (Workforce Investment Act of 1998, Public Law 105-220, August 7, 1998, Section 136, (b) (2) (ii) [C]).

The local implementation of the WIA as it pertains to northeast Oklahoma is conducted by the Tulsa Workforce Investment Board, Incorporated. Workforce Tulsa has developed a Training Provider Certification Application whereby a program of study can be considered as a provider of approved training under WIA guidelines. Among the twenty-nine items in this application relevant to the training to be provided, each program is asked for a description of the skill sets to be acquired and a description of the minimum entry level requirements for that training specialty. Consistency between these two sets

of information is one consideration in the approval process (Tulsa Workforce Investment Board, 2003, Training Provider Certification Application).

The Tulsa Workforce Investment Board also has an employer survey as its answer to the customer satisfaction indicator of performance as required in the WIA. In this survey employers are asked to rate employee performance on a set of basic skills on a one to five scale with five being "excellent". These skills include writing, reading, and verbal communication skills, along with team and cooperative skills (Tulsa Workforce Investment Board, 2003, Northeast Oklahoma Employer Interview). No information was available to indicate that any training program was counseled or denied participation based on the lack of interpersonal communication skills as an element of the curriculum.

Another source of government regulation that may impact workforce development programs is the Carl D. Perkins Vocational and Applied Technology Education Act (20 U.S. C. 2301 et seq.). Through this Act, funds are often made available to educational programs to support secondary and postsecondary students in vocational and technical programs. The implementation of this Act calls for accountability measured according to percentages of graduates going on to employment within Oklahoma. No other evidence was found pertaining to curriculum development or performance criteria expectations for the implementation of this Act as it pertains to the community college.

Some of the occupational specialties offered in workforce development education require state licensing of graduates before employment is permitted. Examples of such occupations include many of the health related specialties such as Dental Hygiene, Nursing, Patient Care Technician, Pharmacy Technology, Physical Therapist Assistant,

Occupational Therapy Assistant, and Respiratory Care Practitioners, and may also include programs such as Child Development, Human Services, and Veterinary Technology (Tulsa Community College, 2003). Disciplines such as these are guided in their curriculum development by requirements prescribed under individual state laws or their respective administrative rules. However, these laws and rules may only imply performance criteria in keeping with those standards held by the professional bodies or organizations whose role it is to oversee their profession. Organizations such as these include the Commission on Accreditation of Allied Health Education Programs, American Occupational Therapy Association, the Commission on Accreditation of Physical Therapy Education, the National Accrediting Agency for Clinical Laboratory Sciences, and the National League for Nursing Accrediting Commission (Oklahoma State Board of Medical Licensure and Supervision, 2004; Tulsa Community College, 2003)

Although not licensed by state government, some programs of study prepare graduates to become certified according to the standards of the profession or occupation. These may include programs such as Accounting Associate, Civil Engineering Technology, Computer Information Systems, Drafting and Design Engineering, Electronics Technology, Emergency Medical Technology, Legal Assistant, Legal Secretary, Medical Assistant, Medical Laboratory Technology, Radiography, and Surgical Technology (Tulsa Community College, 2003). These occupations also refer to their professional organizations for educational performance standards.

In addition to guidance from the professional associations, each workforce development program at Tulsa Community College is guided by input from members of the local employment base through individual advisory committees. These committees

consist of voluntary participants who represent the respective occupation's presence in the community and assist in identifying current occupational and employment needs. Input from these advisory committees is incorporated into the curriculum development efforts as it pertains to skill development (Tulsa Community College, 2003).

Occupational Duty Task Lists and Teaching Methods

Before instruction relating to an occupation can begin, there should be a blue-print or curriculum available outlining the requisite knowledge, skills and attitudes of the job relevant to the current workplace (Dick & Carey, 1996; Grey & Herr, 1998; Smith & Ragan, 1999). Documentation of this type may already exist in the form of occupational duty task lists, or it may need to be constructed from direct workplace observation or feedback from informed industry professionals.

Samples of such duty task lists can be attained from the Oklahoma Department of Career and Technology Education's website link to the *Curriculum and Instructional Materials Center (CIMC) On-line Catalog.* Another source for referencing specific knowledge areas and skills required to perform in an occupational specialty is through the U.S. Department of Labor's Occupational Information Network or *"O*Net®"*, which replaces the previous *Dictionary of Occupational Titles.* Through *O*Net® OnLine* educators can research the database for lists of tasks, required areas of knowledge and skill, and several other subtopics as they relate to specific occupations.

Another method of gaining current information pertaining to the knowledge, skills and attitudes required for an occupation, or for building a new duty task list, could include the use of techniques such as DACUM or DELPHI. Grey and Herr (1998) stated:

> Perhaps the most familiar of this type of methodology is the DACUM process originally developed by the Canadian government. The term DACUM stands for "Developing A Curriculum" and employs a team of eight to ten incumbent workers, instructors, and others who are considered to be experts in an occupation. The group meets face to face, develops the duties and tasks, and then organizes them into a sequential instructional profile (p. 174).

Grey and Herr (1998) also described the DELPHI technique which was originally developed by the Rand Research Corporation and involves feedback from subject-matter experts. The authors described the process as:

> The DELPHI technique can be viewed as a variation of task analysis that focuses on reaching consensus and typically begins with a preexisting task analysis list or a beginning list developed by a panel of experts. This initial duty and task list is mailed to a panel with the request that they indicate the degree to which they believe each item is important and then add new items that they think should have been included on the original. The next mailing includes the items recommended by the panel but not items the panel believed were not important. Commonly three rounds of mailings are done (p. 175).

Other methods for gathering information for curriculum development might include direct observation of an occupation and/or the use of advisory committees (Grey & Herr, 1998).

With respect to including or enhancing interpersonal communication skills in workforce development curricula, it is important to consider which specific skills are important to a particular occupation. By using a resource such as *O*Net® OnLine*, it is possible to search for common traits among many occupations according to shared skills (U.S. Department of Labor, 2003). For example, those skills listed in the *O*Net® OnLine Skills Search* which are relevant to interpersonal communication might include reading comprehension, active listening, writing, speaking, among the list of basic skills. Social skills such as social perceptiveness, coordination, persuasion, negotiation, instruction and service orientation comprise a subsection all unto itself. After selecting individual or any combination of these interpersonal communication skills, the database can list occupations that include the selected characteristics. In individual searches relating to interpersonal communication skills required among various occupations, the *O*Net® OnLine* database displayed the following quantities of occupational titles associated with each characteristic: Reading Comprehension – 320, Active Listening – 273, Speaking – 321, Writing – 209, Coordination – 152, and Social Perceptiveness – 100. Of the thirty-five searchable skills in this database, Speaking appeared to be the most common skill required, with Reading Comprehension second, Active Listening third and Critical Thinking fourth. Clearly interpersonal communication skills are evident among many occupational titles according to this database (U.S. Department of Labor, 2003).

Another concern with regard to integrating skills is that of transferring learning to new or realistic applications, also known as the applications process (Caffarella, 2002; Dick & Carey, 1996; Smith & Ragan, 1999; Taylor, 2000).

> For learners to be able to do this, they must have experienced many situations in which the noncritical features of the situation varied greatly and the critical features were present. In addition, learners must have been either explicitly instructed or encouraged to explicitly elucidate the critical features of a task that call for application of a particular skill or body of knowledge (Smith & Ragan, 1999, p. 121).

Literature on specific techniques for integrating interpersonal communication skills into classroom activities was discussed earlier, demonstrating a variety of methods by which activities reinforcing these skills could be introduced and varied to provide multiple opportunities for rehearsal and improvement of student performance.

Summary

In this review of literature, evidence of the growing need for effective interpersonal communication skills in the workplace has been shown to be quite pervasive across many occupations, as well as across several populations found within any occupation. It has been demonstrated that the influence of technology is both a tool for improving communication efficiency and in part responsible for the growing need for an ever-broadening set of communication skills.

Avenues for bringing interpersonal communication skills to the forefront in the classroom have been highlighted, along with methods of assessing the quality of the teaching and learning efforts. Sources of information useful to workforce development instructors in creating learning opportunities that are relevant to current work requirements have also been presented.

The skill set which applies to effective interpersonal communication must be learned in the context of the job skills to which they will apply. In should not be assumed that these skills will be present later on the job if they are not taught in school. Workforce education should be structured to intentionally engage students in various forms of interpersonal interaction, consistent with the expectations of the workplace (U.S. Department of Labor, 1991).

CHAPTER III

RESEARCH METHODOLOGY

Introduction

The purpose of this study was to describe and compare the perceptions of WFD instructors at TCC regarding the necessity of interpersonal communication in their respective workplace and the availability of interpersonal communication in their classrooms. The instructor's perceptions regarding interpersonal communication in both the workplace and the classroom were to then be compared to student perceptions of the availability of interpersonal communication opportunities and requirements in the WFD classroom.

This study also intended to describe and compare the perceptions of instructors and students with regard to different types of interpersonal communication such as between instructor and student, student to student, and student to outside resources. Finally, this study was to describe the extent to which various methods of communicating such as reading, writing, listening, speaking, observation, skill performance and electronic media are perceived by instructors and students to be available in TCC WFD classrooms.

Chapter III is organized into the following sections:

1. Design of the study,
2. Variables,
3. Populations,

4. Instrumentation,
5. Data gathering procedures and time of research activities, and
6. Data analysis.

Design of the Study

This was a non-experimental, descriptive research study, consistent with the intent of "making careful descriptions of observed phenomena and/or exploring the possible relationships between different phenomena" (Leedy, 1997, p. 189). The data gathered in this study made it possible to create a quantitative description of the perceptions of instructors and students with respect to their interpersonal communication experiences in workforce development courses during the fall semester of 2003 at Tulsa Community College.

Variables

The independent variables for this study were the instructor or student status of the participants as well as a set of demographic variables. These included the number of years teaching in WFD education, age, gender, and the number of years of formal education beyond high school for the student participants. The dependent variables measured in this study were the ratings of the perceived availability of types of classroom interaction (Wiersma, 2000). Held constant was the full-time status of the instructors who were teaching only sixteen-week traditional WFD courses. Courses offered via distance education were not included in this study. A possible intervening variable was the variety of WFD programs included in this study.

Populations

The instructor population for this study consisted of all the full-time instructors teaching 16-week WFD program courses via the traditional classroom at TCC (N = 95). Originally a list of all WFD instructors was attained via TCC administration. Current employment status was verified and adjustments were made as to recent additions or deletions to that list, leaving 119 instructors. Only those considered to be full-time instructors actually teaching WFD courses during the Fall 2003 semester were included in the study. Fourteen instructors from the original list were teaching university parallel courses but no WFD courses this semester and they were eliminated from the population. Ten WFD instructors were teaching courses only via the Internet or an 8-week format and were also eliminated. Four of the remaining population of 95 instructors refused to participate in the study and one instructor was unable to participate due to personal circumstances. Thus, the size of the final teacher population for the study was 90 instructors who volunteered to participate. This was considered near enough to the available total to constitute the population.

The student population included all those students enrolled and present to complete the questionnaire in selected courses of the above mentioned instructors (N = 1061). The original student population was believed to have been approximately 1400 students, however this number was reduced with the deletion of courses taught by instructors who were removed from the list, as well as students either dropping classes or failing to attend class near the end of term. After these

unavoidable losses the size of the final student population for the study was 1061 students.

These populations were accessible in that they were located on the four campuses of Tulsa Community College, were of a reasonable size to be surveyed, and made up of individuals relevant to the study (Farmer & Rojewski, 2001; Wiersma, 2000). All participants took part voluntarily and signed a consent form before participating (see Appendix D).

Instrumentation

Since no relevant instrument matching the requirements of this study was found to exist, three separate questionnaires were created (see Appendices A, B and C) and used to gather data addressing the research questions (Farmer & Rojewski, 2001). The items contained in the three questionnaires in this study followed the problem statement, study purpose and research questions with the intent of extracting data from the WFD instructor and student population at TCC as described in Chapter I. Demographic questions for the instructors related to years employed in the industry or career field, years of teaching experience in WFD education, level of teacher-preparation education, age and gender. Demographic questions for the students included years of formal education beyond high school or its equivalency, age and gender. While these questions did not directly reflect the intent indicated in the research questions, they have yielded additional dimension to the study by qualifying the make-up of the population (American Psychological Association, 2001).

The first questionnaire addressed research question one and is referred to as the August Instructor Questionnaire (see Appendix A). It contained only one core question dealing with the instructor's perception of interpersonal interaction as an element of success in the workplace associated with his or her specific teaching field.

The second and third questionnaires went to the instructors and students respectively and were referred to as the November Instructor Questionnaire (see Appendix B) and the November Student Questionnaire (see Appendix C). These were both distributed approximately twelve weeks into the 16-week semester. It was intended that this time frame would give instructors and students ample opportunity to experience a variety of learning activities in each course surveyed, should such opportunities have been made available. The November Instructor Questionnaire addressed research question two while the November Student Questionnaire addressed research question three.

The November Instructor and Student Questionnaires elicited participant perceptions about reading, listening to, observing, writing, speaking, performing or exchanging electronic communication as elements of the classroom activities, as reflected in research question four. Perceptions regarding these activities were directed toward exchanges between the instructor and student, student to student, and student to outside resources. Research questions five and six were addressed through an analysis of the collected data and will be discussed in the findings and conclusion phases of the study.

A key decision in constructing these questionnaires related to whether items would be closed versus open statements or questions (Gay & Airasian, 2000;

Wiersma, 2000). Wiersma referred to "selected-response or forced-choice items" and "open-ended items" (2000, p. 170). Closed item construction serves to restrict responses, thus increasing the consistency of those responses. Consistency of responses is a strong determinant of reliability (Leedy, 1997). It was important to be sure that the predetermined choices were consistent with the question or root statement and that they did not bias responses. Compiling and analyzing this type of data is often less cumbersome than it would be for the open statements. Closed items can collect nominal, ordinal, interval or ratio scale data (Gay & Airasian, 2000; Leedy, 1997; Wiersma, 2000). Open items allow for an infinite set of possibilities, including all four scale types of measurement data as well. However, that resulting data may vary widely in its consistency, relevance, length and usefulness while making compilation and analysis a difficult task (Wiersma, 2000).

Both Wiersma (2000) and Farmer and Rojewski (2001) emphasized the care required in selecting the response options when using ratings or Likert scale items. However, they offered different advice about constructing rating scales. Wiersma stated:

> The options for response to an item should be exhaustive; the options should be mutually exclusive. For some items, it is necessary to provide a middle-of-the-road or neutral response, such as 'no definite feeling' or 'undecided,' to avoid forcing the respondent to make an undesirable response (2000, p. 169).

By contrast, Farmer and Rojewski stated:

> Some instruments improperly include a middle position in scaled

> response options to accommodate respondents who do not have a directional stance on an issue. In practice, selection of a neutral response might result from lack of understanding of the issue, reluctance to provide an honest answer, or inapplicability. Using a neutral position on a Likert-type response scale is also not logical since it does not represent a unit of increase on a continuum. Providing a "NA" or Not Applicable response option in a column adjacent to the Likert scale is a better way to accommodate responses to items that are not applicable (2001, p. 206).

In this study the Likert-type scale was used with a "not available" response along with four other choices directing participants to rate their perceptions of current interpersonal communication events available in their courses. The options were "1 = Not available", "2 = Available but optional", "3 = Encouraged," "4 = Strongly encouraged," or "5 = Required," indicating varying degrees of perceived availability of the experience. Therefore these questionnaires were consistent with the lack of an available neutral in the four-point scale that follows the Not Available option. Participants were asked to commit to a rating with no option for mid-ground, as recommended by Farmer and Rojewski (2001). In his 1999 study, Wilhelm used a similar format in examining the criticality of specific skills and competencies required by employers of entry-level employees based on the SCANS Report (1991) by using a five point Likert scale ranging from not critical to extremely critical.

The core questionnaire items were designed to be examined both individually as well as within several different clusters. Rated items one, two and three all dealt

with interaction between the instructor and student. Items four, five and six dealt with interaction among students, while items seven, eight and nine dealt with interaction between students and outside resources. The items were also clustered according to specific method of interaction. Items one, four and seven were concerned with reading, listening to or observing activities, being passive elements of communication on the part of students. Items two, five and eight were concerned with writing, role-play or skill demonstration as might occur in a performance or work-related simulation, being more active elements of communication on the part of students. Items three, six and nine were concerned with interaction involving electronic media, also active elements on the part of the students.

The potential for examining the data from several perspectives via the different clusters of questionnaire items supports the construct-related validity of the instruments (Wiersma, 2000). By examining interpersonal interaction from the perspective of who is perceived to be interacting and then again examining the interaction with respect to how they are perceived to be interacting, this strengthens the argument that interpersonal interaction has actually been investigated. The quality of passive versus active interaction on the part of the student would also add to this argument. "Construct validation is concerned with the degree to which the construct itself is actually measured" (Leedy, 1997, p. 34).

With respect to this study, content validity was reinforced by asking participants to consider events as they occurred in specific settings. Content validity was defined by Leedy as "the accuracy with which an instrument measures the factors or situations under study –that is, the 'content' being studied" (1997, p. 33).

Instructors were asked in the August questionnaire to consider the priority given to interpersonal communication in the workplace. In both November questionnaires instructors and students were asked to consider the availability of interpersonal communication as it occurred in the classroom. In the analysis, the items and rating scales which were used to compare the perceptions of instructors and students in the November questionnaires were the same.

Also in support of content validity is the critical step of pilot testing the instruments (Farmer & Rojewski, 2001; Gay & Airasian, 2000; Leedy, 1997; McColl, E., Jocoby, A., Thomas, L., & Soutter, J., 2002; Wiersma, 2000). Having individuals not directly involved in the study examine and provide feedback may have prevented assumptions and critical errors on the part of the researcher while designing the instruments. For this study six colleagues currently teaching at TCC were asked to evaluate the instruments based on their college teaching experiences. They positively supported the relevance of the overall content as well as the mechanics involved in the data collection instruments. Students not included in the actual study were asked to examine the student questionnaire and were asked to report any confusing or ill-defined areas. Suggestions made by these individuals, as well as those from a member of the college's Office of Institutional Effectiveness, have been incorporated into the instruments.

Questionnaires should contain clear instructions (Gay & Airasian, 2000; Wiersma, 2000). Wiersma stated, "Formulating items is essentially a matter of common sense. The law of parsimony applies: Keep things as simple as possible to

obtain the necessary data" (2000, p. 170). Each questionnaire contained concise statements of instruction for the participants to follow.

Other design characteristics considered included reading level, avoiding the use of jargon, word choice and mixing multiple concepts in a single item (American Psychological Association, 2001). Since the term Workforce Development Education might have been unfamiliar to some instructors, the more common term of Technical/Occupational Programs was included in parentheses. While multiple concepts were covered throughout the core questions, each item included either passive communication elements (read, listen to, or observe), active communication elements (submit written work, speak or perform skills), or communication requiring the use of technology (email, online chat, electronic bulletin board postings or instant messaging). These elements were intentionally grouped on the questionnaires according to the involvement of the instructor, fellow students or parties outside the course. It is believed that the randomization of these items would have made the questionnaire and its intent confusing. It is important to avoid leading questions, avoid researcher assumptions and pay attention to the grouping or randomization of items (Farmer & Rojewski, 2001; Gay & Airasian, 2000; Leedy, 1997; McColl et al., 2002; Wiersma, 2000). "Data in descriptive survey research are particularly susceptible to distortion through the introduction of bias into the research design" (Leedy, 1997, p. 191). Poorly worded items could distort the data and cause inaccurate conclusions to be drawn.

One problem area in this study was the closed question regarding teacher-preparation education. While it was believed by the researcher that this question was

straight-forward and clear, many WFD instructors either altered the question, wrote side notes, or gave multiple answers, contrary to the instruction of "Check (√) one". One instructor verbally expressed serious concern and refused to answer the item stating that the question was threatening in the context of the work environment. The potentiality of these problems was not indicated during the pilot test. With these problems, it was decided to delete this from the data analysis.

The use of paper color, ink color, font, and spacing can greatly enhance or diminish the potential effectiveness or impact of a questionnaire (Gay & Airasian, 2000; Leedy, 1997; McColl et al., 2002). Compatible paper and ink color as well as the effective use of white or blank space can contribute to a well-received and possibly completed questionnaire (Gay & Airasian, 2000; Leedy, 1997; McColl et al., 2002).

The August Instructor Questionnaire and attached consent form were printed on beige paper with black ink, intending to give the project the first impression of quality and simplicity. The November Instructor Questionnaire and attached consent form were printed on blue paper, while the November Student Questionnaire and attached consent form were printed on white paper for the benefit of the Data Collection Team and data entry process. Also, there was the need for a mass printing of the student documents, so cost was an issue in color choice. Within the questionnaires, alternating bold and regular fonts were used to link items with their answer set. The instructions were visually set apart from the questions in the second and third questionnaires by using a varying font sizes, intensities and strategic

spacing. All of the consent forms to be kept by the participants for their own records were printed on green paper.

Data Gathering Procedures and Time of Research Activities

The first data gathering phase of this study occurred in August, 2003. All instructor participants were given a copy of the August Instructor Questionnaire as well as two copies of the consent form (see Appendix D). The consent form emphasized the purpose of the study, their voluntary participation, anonymity and confidentiality of responses, the time expected to complete the survey, and access to the opportunity for participants to ask questions or to have their questionnaires removed from the study at their request (Wiersma, 2000). Each consent form was linked to its respective questionnaire by the use of a serial number printed in the bottom right corner of each form. The instructor's names were pre-printed on their consent forms so as to create a specific link to a serial number, since instructors would be surveyed again in November and a data link was necessary. A member of the Health Information Technology profession who routinely deals with privacy issues was consulted regarding the construction of these documents and supported the use of serial numbers to protect identity while still allowing data matching.

As it was explained to each instructor participant in August, one copy of the consent form was to be signed and returned, along with the questionnaire to which it was stapled, to this researcher via the pre-addressed envelope. The second copy of the consent form was to remain with the participant for their personal records. A notation to that fact was clearly printed at the bottom of the consent forms. A few

participants chose to sign the consent form and complete the questionnaire immediately.

This researcher chose to personally distribute the August Instructor Questionnaire as part of a rapport-building effort to gain support for the second phase of the study. Instructor participants were greeted according to the Data Collection Script (see Appendix E) relevant to the August Instructor Questionnaire.

The second and final data gathering phase of the study began in November, 2003, at 12 weeks into the 16-week semester. This phase was conducted by the combined efforts of the researcher, TCC administrators, faculty, staff and students who graciously consented to serve as members of the data collection team. The questionnaires were sorted into individually labeled packets by the instructor participant's name and course. The packets were then distributed to team members who visited designated classrooms per the dates and times pre-arranged between this researcher and each instructor. All team members were volunteers.

Each team member was briefed on the purpose of the study, their voluntary participation, the importance of confidentiality of all questionnaires and responses, the time expected to distribute and complete the survey, and the procedure for introducing and distributing the questionnaires to instructors and students. A written instruction sheet which included a brief script was attached to the outside of each course packet for the team member's reference if needed.

During this phase, team members visited each designated classroom, distributed both the November Instructor Questionnaires and November Student Questionnaires to the participants, and read the instructions for participating in the

study and completing the forms from the relevant Data Collection Team Script (see Appendix E). Each instructor signed another copy of the consent form already stapled to the November Instructor Questionnaire. A total of 90 instructor questionnaires were received. Those instructors who were unable to participate in the study were discussed earlier.

Each student present signed a copy of the consent form and completed an attached November Student Questionnaire. A total of 1061 student questionnaires were received. All students present in class at the time of the team member's visit were included in the study. It was not possible to distinguish between students who had already dropped the course, were soon to drop the course, or simply absent on the day the questionnaire was distributed. Data regarding the quantity of students who complete each course was not available, nor would such data have been applicable to the specific date when the questionnaires were distributed. In many college courses, enrollment figures are often fluid and formal data is not reliable to a specific date since the intent of adult students to complete or drop a course can not be foreseen. In any case, each instructor and student participant was provided with an additional copy of the consent form for their personal records. All completed consent forms and questionnaires were collected by the Data Collection Team member and returned to the packet. Each packet was then returned to the researcher.

Each questionnaire can be identified by its serial number corresponding to the same number on each participant's consent form so as to protect the anonymity of the participant. Serial numbers are consistent for both the August and November Instructor Questionnaires and consent forms. The data has been reviewed only by the

researcher and reported only in an aggregate manner. Individual questionnaires are being treated as privileged and confidential and will not be released or revealed.

Data Analysis

Descriptive statistics were used to analyze the various components of this study. Measures of central tendency and variability were used to clarify patterns in the frequency distributions associated with the various perceptions of instructors and students (Gravetter, 1999; Shavelson, 1996). The scope of this study was strictly limited to the population of WFD instructors and students within TCC. Inferences as to behaviors of other populations have not and will not be drawn.

Data from each question was entered into and analyzed with the most current version of Statistical Package for the Social Sciences (SPSS®) available to the researcher which was version 11.0. The following functions of descriptive statistical analyses were conducted:

1. On the August Instructor Questionnaire, the mean, median, mode, range, standard deviation and frequency distribution of the instructors' ratings of interpersonal interaction as an element of success in the workplace were calculated.
2. From November questionnaires of both instructor and student ratings of interaction in the classroom, the mean, median, mode, range, standard deviation and frequency distribution of each of the following were calculated:

    a) individual responses for each of the nine core questions,

    b) an overall composite score from each of the nine core questions,

    c) the subsets of questions 1, 2 and 3; then 4, 5 and 6; then 7, 8 and 9 followed by a descriptive comparison between instructor and student responses in

examining variations in ratings regarding instructor to student, student to student, and student to outside resource interaction, and

d) the subsets of questions 1, 4 and 7; then 2, 5 and 8; then 3, 6 and 9 followed by a descriptive comparison between instructor and student responses in examining variations in ratings regarding the methods involved in the active, passive and electronic interactions.

3. The data collected in the demographic section regarding age, gender, years teaching and years of formal education was used for comparing the perceptions of workplace and classroom interaction for subgroups of the instructors and students as well. This was done with cross-tabulation descriptive analysis.

Since sufficient quantities of questionnaires were returned, this was considered a population or census study. Therefore, no further comparisons were required (Wiersma, 2000).

CHAPTER IV

PRESENTATION OF FINDINGS

Introduction

This chapter presents the analysis of data collected as WFD instructors and their students were surveyed concerning their perceptions regarding the priority and availability of interpersonal communication as it relates to the workplace and WFD classroom. The findings presented in this chapter describe the populations, address the research questions directly, and address the perceptions of workplace and classroom interaction for subgroups of the instructors and students with cross-tabulation descriptive analysis. These findings are reported using measures of central tendency and variability. Analysis of the data has been organized around the six research questions.

Description of the Populations

Instructor Population

The instructor population for this study consisted of all the full-time instructors teaching 16-week WFD program courses at Tulsa Community College (TCC) via the traditional classroom (N = 90). Table 1 summarizes the profile data for this population. As shown in Table 1, this group consisted of 67.7% female (n = 61) and 32.2% male instructors (n = 29) ranging from 29 to 70 years of age. The mean

TABLE 1

PROFILE OF INSTRUCTOR POPULATION (N = 90)

Variable	Number and %	Range	Mean	Median	Mode	SD	Variance
Gender							
Male	29 / 32.2%						
Female	61 / 67.7%						
Age		29 – 70 yrs	49.52	50.0	55	8.495	72.16
Years Employed in Career Field		1 – 45 yrs	20.92	21.0	20.0	9.82	96.49
Years Teaching in WFD Education		0 - 33 yrs	12.39	11.0	12.0	7.98	63.65

instructor age was 49.52, the median was 50.0, and the mode was 55 years of age. The standard deviation was 8.495, the variance was 72.16, and the range was 41.

The instructor population reported having worked in their respective career fields from one to 45 years, and reported having taught in WFD education from newly hired to 33 years. The mean for having worked in their respective career fields was 20.92, the median was 21.0, and the mode was 20.0 years of employment. The standard deviation was 9.82, the variance was 96.49, and the range was 44. The mean for years teaching WFD education was 12.39, the median was 11.0, and the mode was 12.0 years of teaching. The standard deviation was 7.98, the variance was 63.65, and the range was 33. This equates with the majority of TCC WFD instructors' having begun their employment during the late 1970's and early 1980's, while having begun teaching during the late 1980's and early 1990's. In general terms, the instructor

population appears to be experienced in the career fields which they teach. Since the medians for both years of employment (21 years) and years teaching (11.0 years) indicate the point at which 50% of each group are above and below, the experience base for at least half of this group might be considered somewhat dated, depending upon the degree to which these individuals choose to remain current in their fields. It might also be considered that this group is well-seasoned as WFD instructors, experienced in their roles as educators.

Twenty-eight different WFD programs were represented in this study and are listed in Table 2. As part of the agreement for conducting this study with the cooperation of TCC, no distinction was made as to any quantity or percentage of individuals representing any specific WFD program, so as to protect the identities of all participants.

Student Population

The student population for this study consisted of students taking the 16-week WFD program courses taught only by the previously described instructors (N = 1061). Table 3 summarizes the profile data for this population. As shown in Table 3, this group consisted of 73.2% females (n = 777), 25.7% males (n = 273) and 1% (n = 11) choosing not to report their gender. These students varied in age from 16 to 72 years with a mean age of 30.15 years, a median of 27.0, and a mode of 21. The standard deviation was 10.20, the variance was 103.99, and the range was 56.

Students were asked how many years of formal education they had beyond high school or its equivalent. This group reported having had experience as students

TABLE 2

TCC WFD PROGRAMS REPRESENTED IN THE STUDY

1. Aviation Sciences Technology
2. Business
3. Child Development
4. Computer Information Sciences
5. Dental Hygiene
6. Desktop Publishing
7. Drafting & Design Engineering
8. Electronics Technology
9. Health Information Technology
10. Horticulture Technology
11. Human Resources
12. Human Services
13. International Language Studies
14. Law Enforcement
15. Legal Assistant
16. Management
17. Marketing
18. Medial Assistant
19. Medical Laboratory Technology
20. Nursing
21. Occupational Therapy Assistant
22. Patient Care Technician
23. Physical Therapist Assistant
24. Quality Control
25. Radiography
26. Respiratory Care
27. Stage Production Technology
28. Veterinary Technology

Note: As part of the agreement for conducting this study with the cooperation of TCC, no distinction was made as to any quantity or percentage of individuals from specific WFD programs, so as to protect the identities of all participants.

TABLE 3

PROFILE OF STUDENT POPULATION (N = 1061)

Variable	Number and %	Range	Mean	Median	Mode	SD	Variance
Gender							
Male	273 / 25.7%						
Female	777 / 73.2%						
Not Reported	11 / 1.0%						
Age		16 – 70 yrs	30.15	27.0	21	10.20	103.99

ranging from new in college, or 0 years, to 25 years of formal education beyond high school or its equivalent. The mean for their educational experience was 3.31 years beyond high school or its equivalent, while the median was 3.0, and the mode was 2.0. The standard deviation was 2.57, the variance was 6.60, and the range was 25 years. This group was generally quite new to the college education setting, with their experience being largely since the year 2000.

Research Question One: Interpersonal Interaction in the Workplace as a Priority of WFD Instructors

The first research question asked for the instructors' perceptions of interpersonal interaction as an element of success in the workplace associated with their specific teaching fields. In this study the Likert-type scale was used where the options for this item on the August Instructor Questionnaire were "1 = Not necessary," "2 = Available but optional," "3 = Encouraged," "4 = Essential," "5 = Absolutely essential". As represented in Table 4, 72.2% of the instructors rated interpersonal communication as "absolutely essential" for success in the workplace, while another 26.7% rated it as "essential," and only 1% rated it as "encouraged." The mean of this rating was 4.76 (on the 5-point scale), while the median was 5.0, and the mode was 5. The standard deviation was 0.48, the variance was 0.23, and the range was 2. The perceptions shared by this group of WFD instructors places interpersonal interaction at the highest priority for the scale by an overwhelming majority.

TABLE 4

PERCEPTIONS OF INTERPERSONAL INTERACTION

AMONG TCC WFD INSTRUCTORS AND STUDENTS:

FREQUENCY DISTRIBUTION BY PERCENTAGE

Instructors (N = 90)							Students (N = 1061)					
Missing	1	2	3	4	5	**Rating**	5	4	3	2	1	*Missing*
0.0			1.1	26.7	72.2	**Workplace Priority**						
						Items						
0.0			4.4	22.2	73.3	**1**	49.9	36.9	11.2	1.3	0.6	*0.1*
0.0	1.1	2.2	5.6	11.1	80.0	**2**	55.7	25.1	11.8	3.4	3.8	*0.3*
0.0	12.2	35.6	15.6	20.0	16.7	**3**	20.1	18.6	15.6	31.7	13.6	*0.6*
2.2	13.3	8.9	24.4	13.3	37.8	**4**	27.4	26.9	21.2	10.5	13.7	*0.4*
0.0	24.4	13.3	17.8	14.4	30.0	**5**	21.3	22.4	17.3	12.3	25.9	*0.8*
0.0	32.2	28.9	15.6	12.2	11.1	**6**	13.7	14.6	15.7	28.8	26.1	*1.0*
2.2	22.2	13.3	27.8	12.2	22.2	**7**	16.5	21.5	21.9	17.2	22.8	*0.2*
0.0	45.6	16.7	14.4	10.0	13.3	**8**	11.5	15.6	16.1	18.8	37.7	*0.2*
0.0	57.8	25.6	10.0	4.4	2.2	**9**	5.7	9.5	14.4	23.3	46.7	*0.4*

Research Question Two: WFD Instructor Perceptions Regarding the Availability of Categories of Interaction

The second research question dealt with the degree to which WFD instructors at TCC perceive the availability of different categories of interpersonal communication in the classroom, including instructor to student, student to student, and student to outside resource. This data was gathered via the November Instructor Questionnaire which asked this group to rate nine interaction-related items on a five-point Likert-type scale. The options were "1 = Not available," "2 = Available but optional," "3 = Encouraged," "4 = Strongly encouraged," and "5 = Required," indicating varying degrees of perceived opportunities for interpersonal interaction provided to students within the designated course. Items one, two and three all dealt with interaction between the instructor and student. Items four, five and six dealt with interaction between students, while items seven, eight and nine dealt with interaction between students and outside resources. Relevant frequency and descriptive data for each of the nine items has been made available in Tables 4 and 5, as well as Figure 1. These ratings indicate that instructors regarded items one and two as being available most often of all the items, while items six, eight and nine were rated lowest overall, or a rating that fell below the designation of "encouraged".

TABLE 5

PERCEPTIONS OF INTERPERSONAL INTERACTION

AMONG TCC WFD INSTRUCTORS AND STUDENTS:

MEASURES OF CENTRAL TENDENCY AND VARIABILITY

Instructors (N = 90)						Students (N = 1061)				
Range	SD	Mode	Median	Mean		Mean	Median	Mode	SD	Range
2	0.48	5	5.00	4.71	**Workplace Priority**					
					Item					
2	0.554	5	5.0	4.69	**1**	4.34	4.0	5	0.773	4
4	0.779	5	5.0	4.67	**2**	4.26	5.0	5	1.043	4
4	1.314	2	3.0	2.93	**3**	3.0	3.0	2	1.364	4
4	1.430	5	4.0	3.55	**4**	3.44	4.0	5	1.354	4
4	1.571	5	3.0	3.12	**5**	3.01	3.0	1	1.502	4
4	1.348	1	2.0	2.41	**6**	2.60	2.0	2	1.376	4
4	1.450	3	3.0	2.99	**7**	2.92	3.0	1	1.399	4
4	1.463	1	2.0	2.29	**8**	2.44	2.0	1	1.418	4
4	0.981	1	1.0	1.68	**9**	2.04	2.0	1	1.228	4

Questionnaire items: Through the syllabus, agenda, goals, objectives and all instructions pertaining to this course, it was perceived that the instructor has provided students the opportunity to...

1. Read written material, listen to, or observe activities provided or performed by the instructor.
2. Submit written work, speak before, or perform a skill demonstration to be reviewed by the instructor.
3. Exchange email, online chat, electronic bulletin board postings or instant messages with the instructor.
4. Read written material, listen to, or observe activities provided or performed by fellow students.
5. Exchange written work, participate in role play or skill demonstration to be reviewed by fellow students.
6. Exchange email, online chat, or messages posted to an electronic bulletin board posted by fellow students.
7. Read written material, listen to, or observe activities provided or performed by parties outside this course.
8. Exchange written work, participate in role play or skill demonstration with parties outside this course.
9. Exchange email, online chat, or messages posted to an electronic bulletin board with parties outside this course.

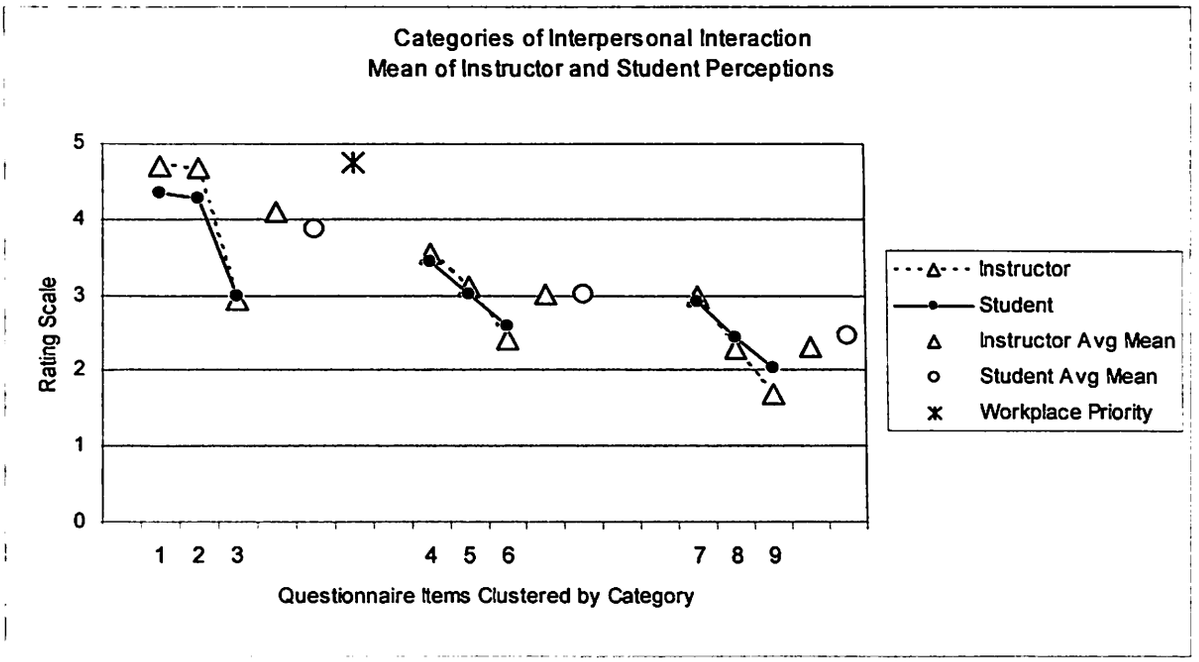

Figure 1. Interaction categories: 1, 2, 3 = instructor to student; 4, 5, 6 = between students; 7, 8, 9 = between students and parties outside the course.

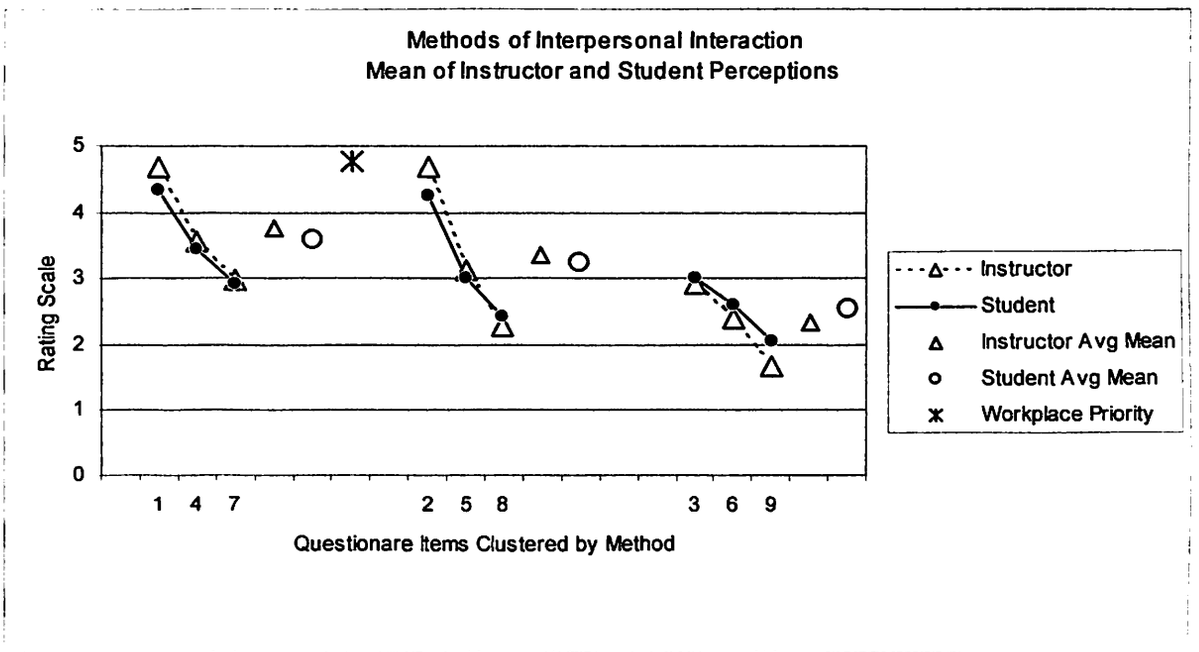

Figure 2. Methods of interaction: 1, 4, 7 = passive (reading, listening, or observing); 2, 5, 8 = active (writing, speaking, or performing skill demonstrations); 3, 6, 9 = electronic communication.

Individual Instructor Interaction Items

Relevant frequency and descriptive data for each of the nine items has been made available in Tables 4 and 5, as well as Figure 1. Instructor Item 1 (n = 90) dealt with the perceptions of having made available opportunities for students to engage in passive communications including reading, listening to, or observing activities provided or performed by the instructors during course. The rating of "required" was reported by 73.3% of the instructors for this item, while 22.2% rated it as "strongly encouraged," and 4.4% rated it as "encouraged". The mean for this item was 4.69, the median was 5.00, and the mode was 5. The standard deviation was 0.554, the variance was 0.307, and the range was 2.

The ratings for Instructor Item 1 were closely clustered at the mean, showing little variation, with the mean, median and mode all consistent with one another. The mean for this item was rated only 0.02 less on the 5-point rating scale than the priority given by the same instructors for that of interpersonal interaction in the workplace. This item was overall the closest match in terms of each of the measures of central tendency and variability to the ratings given for interpersonal interaction in the workplace, and this item was rated the highest of all nine instructor rated items.

Instructor Item 2 (n = 90) dealt with the instructors' perceptions of having provided opportunities for students to engage in active communication including submitting written work, speaking before, or performing a skill demonstration to be reviewed by the instructor. Instructors rated this item with 80.0% at "required," 11.1% at "strongly encouraged," 5.6% at "encouraged," 2.2% at "available but optional" and 1.1% at "not available". The mean for this item was 4.67, the median

was 5.00, and the mode was 5. The standard deviation was 0.779, the variance was 0.607, and the range was 4.

The ratings for Instructor Item 2 did not vary greatly from the mean, with the three measures of central tendency being consistent with one another. The mean for this item was rated only 0.04 less on the 5-point rating scale than the priority given by the same instructors for that of interpersonal interaction in the workplace. Likewise, the mean for this item was rated only 0.02 less than the rating for Item 1, was also very similar to the measures of central tendency and variability for the workplace priority of interpersonal interaction, and it rated second highest of all instructor rated items.

Instructor Item 3 (n = 90) dealt with the instructors' perceptions of having provided opportunities for students to exchange electronic communications including email, online chat, electronic bulletin board postings or instant messages with the instructor. Instructors rated this item with 16.7% at "required," 20.0% at "strongly encouraged," 15.6% at "encouraged," 35.6% at "available but optional" and 12.2% at "not available". The mean for this item was 2.93, the median was 3.00, and the mode was 2. The standard deviation was 1.314, the variance was 1.726, and the range was 4.

The ratings for Instructor Item 3 showed a greater degree of variation from the mean than the previous two items, being spread across the five-point scale. Beyond the mode of 2 at 35.6% and corresponding to "available but optional", the other four items on the rating scale were all rated within 7.8% of one another. It is important to note that although the mode was 2, indicating "available but optional", the degree of

variability for this item was sufficient to influence the mean toward a higher rating of 2.93, more closely corresponding to the rating of "encouraged". Fifty-two percent of the instructors chose ratings which varied from "required" to "encouraged" for this Item 3. This item was rated by far the lowest of the three items which specifically included the instructor.

Instructor Item 4 (n = 88) dealt with the instructors' perceptions of having provided opportunities for students to read written material, listen to, or observe activities provided or performed by fellow students. Instructors rated this item with 37.8% at "required," 13.3% at "strongly encouraged," 24.4% at "encouraged," 8.9% at "available but optional" and 13.3% at "not available". The mean for this item was 3.55, the median was 4.00, and the mode was 5. The standard deviation was 1.430, the variance was 2.044, and the range was 4. With this item the deviation showed a wider variation among instructor ratings across the scale.

The ratings for this item again showed a strong degree of variation from the mean compared to the previous items, being more evenly spread across the five-point scale. It is important to note for this item that while the mode was 5, indicating "required", the degree of variability for this item was sufficient to influence the mean toward a lower rating of 3.55, corresponding to a rating between "encouraged" and "strongly encouraged". Sixty percent of the instructors chose ratings which varied from "not available" to "strongly encouraged" for Instructor Item 4.

Instructor Item 5 (n = 90) dealt with the instructors' perceptions of having provided opportunities for students to exchange written work, participate in role play or skill demonstration to be reviewed by fellow students. Instructors rated this item

with 30.0% at "required," 14.4% at "strongly encouraged," 17.8% at "encouraged," 13.3% at "available but optional" and 24.4% at "not available". The mean for this item was 3.12, the median was 3.00, and the mode was 5. The standard deviation was 1.571, the variance was 2.468, and the range was 4.

The degree of variation for Instructor Item 5 was the greatest of all the nine items, with the percentage of instructors' ratings largely congregated at both the highest and lowest ratings on the scale. One other rating, that being "not available," was within 5.6% of the mode which was "required". For this item the mean was influenced toward the middle of the rating scale by the similar strengths of the mode and the second strongest rating at the opposite end of the scale. Among WFD instructors there seems to have been a major difference between those who perceived themselves to have made this type of opportunity available to students and those who did not.

Instructor Item 6 (n = 90) dealt with the instructors' perceptions of having provided opportunities for students to exchange email, online chat, or messages posted to an electronic bulletin board posted by fellow students. Instructors rated this item with 11.1% at "required," 12.2% at "strongly encouraged," 15.6% at "encouraged," 28.9% at "available but optional" and 32.2% at "not available". The mean for this item was 2.41, the median was 2.00, and the mode was 1. The standard deviation was 1.348, the variance was 1.818, and the range was 4. The variation among ratings for this item was less than for Item 5, but nevertheless spread in a consistently decreasing pattern of instructor responses from the lowest to the highest

rating. For this item, one other rating, that being "available but optional," was within 3.3% of the mode which was "not available".

Instructor Item 7 (n = 88) dealt with the instructors' perceptions of having provided opportunities for students to read written material, listen to, or observe activities provided or performed by parties outside the course. Instructors rated this item with 22.2% at "required," 12.2% at "4 = strongly encouraged," 27.8% at "encouraged," 13.3% at "available but optional" and 22.2% at "not available". The mean for this item was 2.99, the median was 3.00, and the mode was 3. The standard deviation was 1.450, the variance was 2.103, and the range was 4. For this item two other ratings, those being "not available" and "required" were within 5.6% of the mode which was "encouraged".

Instructor Item 8 (n = 90) dealt with the instructors' perceptions of having provided opportunities for students to exchange written work, participate in role play or skill demonstration with parties outside the course. Instructors rated this item with 13.3% at "required," 10.0% at "strongly encouraged," 14.4% at "encouraged," 16.7% at "available but optional" and 45.6% at "not available". The mean for this item was 2.29, the median was 2.00, and the mode was 1. The standard deviation was 1.463, the variance was 2.140, and the range was 4. While the deviation for this item was widely spread across the scale, the majority solidly reported the lowest possible rating.

Instructor Item 9 (n = 90) dealt with the instructor's perceptions of having provided opportunities for students to exchange email, online chat, or messages posted to an electronic bulletin board with parties outside the designated course.

Instructors rated this item with 2.2% at "required," 4.4% at "strongly encouraged," 10.0% at "encouraged," 25.6% at "available but optional" and 57.8% at "not available". The mean for this item was 1.68, the median was 1.0, and the mode was 1. The standard deviation was 0.981, the variance was 0.962, and the range was 4. The variation was not large for this item, where the majority chose the lowest possible rating of "not available."

Instructor Items by Category of Interaction

In Table 6, the data described for the instructor perceptions for all nine items has been combined to reflect the ratings as they pertain to the availability of different categories of communication interaction in the classroom, including instructor to student, between students, and student to outside resource. To accomplish this, the average of the means based on samples of unequal size was calculated (Shavelson, 1996). While the instructor population for this study consisted of 90 individuals, seven of the nine items had 90 responses each while two items had only 88 responses. By calculating an average of the means for each cluster of items based on similar categories of interaction, it became possible to reinforce the description of any trends that might have been apparent when examining the means for each item individually.

The average mean for items one, two and three from the November Instructor Questionnaires was 4.10, with all three statements pertaining to interaction between the instructor and individual student from the instructors' perspectives. The average mean for items three, four and five was 3.02, with all three statements pertaining to interaction between students. The average mean for items five, six and seven was

2.32, with all three statements pertaining to interaction between the student and resources outside the course. The three average means for the instructor responses showed a definite downward trend along the rating scale, going from item one through nine in numeric order. This was consistent with the downward trend in ratings when comparing each of the three clusters of items to one another. The perception of having made various learning experiences available appears to have diminished greatly after the items which directly involved the instructor.

Research Question Three: WFD Student Perceptions Regarding the Availability of Categories of Interaction

The third research question dealt with the degree to which TCC WFD students perceive the availability of the different categories of interpersonal communication in their WFD courses, again including instructor to student, student to student and student to outside resource. This data was gathered via the November Student Questionnaire asking this group to rate the same nine interaction-related items pertaining to interpersonal interaction opportunities made available by the instructor. This questionnaire relied on the same five-point Likert-type scale as was used for the instructor perceptions. Data from all nine items has been made available in Tables 4 and 5, as well as Figure 1 and 2, alongside the data recorded for the instructor perceptions. Again, items one, two and three all dealt with interaction between the instructor and student. Items four, five and six dealt with interaction between students, while items seven, eight and nine dealt with interaction between students and outside resources.

TABLE 6

AVERAGE OF THE MEANS* FOR CLUSTERS OF LIKE ITEMS

Instructors		Rated Item	Students	
n	**Mean**		**Mean**	**n**
All statements where interaction was Instructor ↔ Student				
90	4.69	**1**	4.34	1060
90	4.67	**2**	4.26	1058
90	2.93	**3**	3.00	1055
	4.10*	**1 + 2 + 3**	**3.87***	
All statements where interaction was Student ↔ Student				
88	3.55	**4**	3.44	1053
90	3.12	**5**	3.01	1053
90	2.41	**6**	2.60	1050
	3.02*	**4 + 5 + 6**	**3.02***	
All statements where interaction was Student ↔ Outside Resource				
88	2.99	**7**	2.92	1059
90	2.29	**8**	2.44	1058
90	1.68	**9**	2.04	1057
	2.32*	**7 + 8 + 9**	**2.47***	
All statements where interaction was passive, including reading, listening to, or observing activities.				
90	4.69	**1**	4.34	1060
88	3.55	**4**	3.44	1053
88	2.99	**7**	2.92	1059
	3.75*	**1 + 4 + 7**	**3.57***	
All statements where interaction was active, including submitting or exchanging written work, speaking, or performing a skill demonstration.				
90	4.67	**2**	4.26	1058
90	3.12	**5**	3.01	1053
90	2.28	**8**	2.44	1058
	3.36*	**2 + 5 + 8**	**3.24***	
All statements where interaction was electronic including exchanging email, online chat, electronic bulletin board postings or instant messages.				
90	2.93	**3**	3.00	1055
90	2.41	**6**	2.60	1050
90	1.68	**9**	2.04	1057
	2.34*	**3 + 6 + 9**	**2.55***	

*Average of the Means based on samples of unequal size = $\frac{\Sigma(N_1*Mean_1) + (N_2*Mean_2) + (N_3*Mean_3)}{N_1 + N_2 + N_3}$ (Shavelson, 1996).

Individual Student Interaction Items

Student Item 1 (n = 1060) dealt with perceptions of having been provided opportunities for to read written material, listen to, or observe activities provided or performed by the instructors during course. The rating of "required" was reported by 49.9% of the students for this item, while 36.9% rated it as "strongly encouraged," 11.2% rated it as "encouraged," 1.3% at "available but optional" and 0.6% at "not available". The mean for this item was 4.34, the median was 4.0, and the mode was 5. The standard deviation was 0.773, the variance was 0.598, and the range was 4. This item was fairly restricted in its variation, especially when compared to the other eight student items in this study. Students appeared to perceive these opportunities quite consistently as being available and important in the course.

Student Item 2 (n = 1058) dealt with the students' perceptions of having been provided opportunities to submit written work, speak before, or perform a skill demonstration to be reviewed by the instructor. Students rated this item with 55.7% at "required," 25.1% at "strongly encouraged," 11.8% at "encouraged," 3.4% at "available but optional" and 3.8% at "not available". The mean for this item was 4.26, the median was 5.00, and the mode was 5. The standard deviation was 1.043, the variance was 1.087, and the range was 4. The mean for this item was influenced away from the mode by the moderate percentages for "strongly encouraged" and "encouraged".

Student Item 3 (n = 1055) dealt with the students' perceptions of having been provided opportunities to exchange email, online chat, electronic bulletin board postings or instant messages with the instructor. Students rated this item with 20.1%

at "required," 18.6% at "strongly encouraged," 15.6% at "encouraged," 31.7% at "available but optional" and 13.6% at "not available". The mean for this item was 3.00, the median was 3.00, and the mode was 2. The standard deviation was 1.364, the variance was 1.861, and the range was 4. For this item, the majority rating was at the next to the lowest possible rating, but the variation in the other ratings was enough to influence the mean toward the center of the scale. Beyond the mode, the values for the other four ratings were all within 6.5% of one another, which included ratings above and below the mode.

Student Item 4 (n = 1057) dealt with the students' perceptions of having been provided opportunities to read written material, listen to, or observe activities provided or performed by fellow students. Students rated this item with 27.4% at "required," 26.9% at "strongly encouraged," 21.2% at "encouraged," 10.5% at "available but optional" and 13.7% at "not available". The mean for this item was 3.44, the median was 4.00, and the mode was 5. The standard deviation was 1.354, the variance was 1.832, and the range was 4. The variation for this item was spread across all the possible ratings, and was quite close to being bi-modal with the rating of "strongly encouraged" within 0.5% of the mode which was "required". Three of the ratings for this item were within 6.2% of one another.

Student Item 5 (n = 1053) dealt with the students' perceptions of having been provided opportunities to exchange written work, participate in role play or skill demonstration to be reviewed by fellow students. Students rated this item with 21.3% at "required," 22.4% at "strongly encouraged," 17.3% at "encouraged," 12.3% at "available but optional" and 25.9% at "not available". The mean for this item was

3.01, the median was 3.00, and the mode was 1. The standard deviation was 1.502, the variance was 2.255, and the range was 4. The variation for this item was consistent with that of the instructor responses for their same item, being greater than the other eight rated by the students. Again, the greater percentages of ratings came at or near either end of the rating scale. For this item two other ratings, those being "required" and "strongly encouraged" were all within 4.6% of the mode which was "not available".

Student Item 6 (n = 1050) dealt with the students' perceptions of having been provided opportunities to exchange email, online chat, or messages posted to an electronic bulletin board posted by fellow students. Students rated this item with 13.7% at "required," 14.6% at "strongly encouraged," 15.7% at "encouraged," 28.8% at "available but optional" and 26.1% at "not available". The mean for this item was 2.60, the median was 2.00, and the mode was 2. The standard deviation was 1.376, the variance was 1.892, and the range was 4. The variation for this item was somewhat more tightly arranged, but gravitating toward the lower end of the rating scale. One other rating, that of "not available," was within 2.7% of the mode which was "available but optional".

Student Item 7 (n = 1059) dealt with the students' perceptions of having been provided opportunities to read written material, listen to, or observe activities provided or performed by parties outside the course. Students rated this item with 16.5% at "required," 21.5% at "strongly encouraged," 21.9% at "encouraged," 17.2% at "available but optional" and 22.8% at "not available". The mean for this item was 2.92, the median was 3.00, and the mode was 1. The standard deviation was 1.399,

the variance was 1.957, and the range was 4. For this item, all five ratings were within 6.3% of the mode, indicating no decisive choice among student responses.

Student Item 8 (n = 1058) dealt with the students' perceptions of having been provided opportunities to exchange written work, participate in role play or skill demonstration with parties outside the course. Students rated this item with 11.5% at "required," 15.6% at "strongly encouraged," 16.1% at "encouraged," 18.8% at "available but optional" and 37.7% at "not available". The mean for this item was 2.44, the median was 2.00, and the mode was 1. The standard deviation was 1.418, the variance was 2.010, and the range was 4. While the variation for this item was well spread, there was a greater tendency for students to choose "not available."

Student Item 9 (n = 1057) dealt with the students' perceptions of having been provided opportunities to exchange email, online chat, or messages posted to an electronic bulletin board with parties outside the designated course. Students rated this item with 5.7% at "required," 9.5% at "strongly encouraged," 14.4% at "encouraged," 23.3% at "available but optional" and 46.7% at "not available". The mean for this item was 2.04, the median was 2.0, and the mode was 1. The standard deviation was 1.228, the variance was 1.507, and the range was 4. This item was also consistent with instructor responses for their like item. Both groups indicated overwhelmingly that the use of electronic methods to communicate with groups outside the course was "not available."

Student Items by Category of Interaction

In Table 6, the data described for the student perceptions for all nine items has been combined to reflect the ratings as they pertain to the different categories of communication interaction in the classroom, including instructor to student, between students, and student to outside resource. As was stated previously, to accomplish this, the average of the means based on samples of unequal size was calculated (Shavelson, 1996). Since not all students participating in the study completed all nine items, the individual items could not be considered equally since the quantity of responses between items varied slightly. While this population consisted of 1061 student participants, the quantity of responses to the nine items varied from 1050 to 1060. Again, the use of average means alongside the clusters of questionnaire items reinforces the image posed by the data from the individual items.

The average mean for items one, two and three from the November Student Questionnaires was 3.87, with all three statements pertaining to interaction between the instructor and individual student from the students' perspective. The average mean for items three, four and five was 3.02, with all three statements pertaining to interaction between students. The average mean for items five, six and seven was 2.47, with all three statements pertaining to interaction between the student and resources outside the course. A comparison of the average means for the student items showed a steady decline from the first through the third cluster, as was consistent with the means for the student responses on the individual items.

Research Question Four: Perceptions of Instructors and Students Relating to Methods of Interaction

Research question four referred to the perceptions of TCC WFD instructors and students regarding the availability of different methods of interaction including reading, listening, observing, writing, speaking, skill performance and electronic media. In Tables 4, 5, and 6, as well as Figure 2, the data described for both instructor and student perceptions for all nine items was combined to reflect the availability ratings as they pertained to the different methods of interaction in the TCC WFD classroom. Again, to accomplish this, the average of the means based on samples of unequal size was calculated (Shavelson, 1996) due to an unequal quantity of responses to the individual questionnaire items.

Methods of Interaction: Reading, Listening, and Observing (Passive)

The average mean for items one, four and seven from the November Instructor Questionnaires was 3.75, where all three statements included reading written material, listening to, or observing activities. The average mean for the same items from the November Student Questionnaires was 3.57. The means of the individual items in this first cluster showed a rather dramatic decline that was almost parallel between the instructor and student responses. The reported perceptions of the two groups were highly consistent with one another for this cluster.

Methods of Interaction: Writing, Speaking, and Skill Demonstration (Active)

The average mean for items two, five and eight from the instructor questionnaires was 3.36, where with all three statements included submitting or exchanging written work, speaking, or performing a skill demonstration. The average mean for the same items from the student questionnaires was 3.24. The means of the individual items in this second cluster showed an even more dramatic decline which was parallel between the instructor and student responses, and then became almost identical to one another. The reported perceptions of the two groups were again highly consistent with one another for this cluster.

Methods of Interaction: Electronic Communication

The average mean for items three, six and nine from the instructor questionnaires was 2.34, where all three statements included exchanging email, online chat, electronic bulletin board postings or instant messages. The average mean for the same items from the student questionnaires was 2.55. The means of the individual items in this third cluster showed a steady decline which was quite similar between the instructor and student responses. The reported perceptions of the two groups were again highly consistent with one another for this cluster in terms of the downward trend. However in this cluster the students consistently gave slightly higher ratings than did the instructors for each item pertaining to electronic communication. This was reinforced by the slightly greater student average mean for this cluster over the average mean for the instructors.

Research Question Five: Relationship Between Instructor and Student Perceptions Regarding Categories and Methods of Interaction

Research question five dealt with the relationship between instructor and student perceptions regarding the availability of different categories as well as methods of interaction in the TCC WFD classroom. Data reflecting the relationship between the various conditions was presented in Tables 4, 5, and 6 as well as Figures 1 and 2.

In first looking at the ratings chosen by the study participants it was noted that of the nine rated items, both instructors and students responded with the greatest percentages within their respective populations to six of the same ratings. For items one, two and four both groups chose "required" with the greatest percentage. For item three both groups chose "available but optional" with the greatest percentage, while both groups rated items eight and nine as "not available" most often. For these items both groups perceived similar levels of availability for the category or method of interaction as stated in each.

By contrast, for item five the instructors most often chose "required" while the students chose to rate this same item as "not available", as indicated by the mode for each. The median for each item, however, was at the middle of the rating scale for both groups. This statement dealt with exchanging written work, participating in role play or skill demonstration to be reviewed by fellow students. These similarities and differences were explored further in this section.

Categories of Interaction: Instructor and Student

The different categories of interaction in the classroom included instructor to student, between students, and between students and parties outside the course. First to be examined was the relationship between instructor and student perceptions pertaining to the opportunities for interaction only between the instructor and student, accomplished by all methods described in the study including reading, listening, observing, writing, speaking, skill demonstration, and electronic communication. These elements were contained within items one, two and three.

The WFD instructors in this study rated having provided such opportunities with the individual means for items one, two and three being 4.69, 4.67 and 2.93 respectively (see Table 6); with standard deviations at 0.554, 0.779 and 1.314 respectively; and an average mean of 4.10. With respect to the original rating scale where the options were "1 = Not available," "2 = Available but optional," "3 = Encouraged," "4 = Strongly encouraged," and "5 = Required," it appeared that instructors perceived having made the opportunities included in items one and two available to students, while not perceiving having made the opportunities included in item three available to any great extent (see Figure 1). The range for the instructor responses to item one was only two out of a possible four given the available rating scale for the November Instructor Questionnaires. The range for all other instructor responses in this study was four.

The WFD students in this study rated having been provided such opportunities with the individual means for items one, two and three as 4.34, 4.26 and 3.00; with standard deviations at 0.773, 1.043, and 1.364 respectively; and an average mean of

3.87. With regard to the questionnaire's Likert-type rating scale, students rated their perceptions of the availability of this type of opportunity as reflected in their responses to the first two items as required, but definitely less for the electronic communication with the instructor. The perceptions of the students for these three items were consistent with those of the instructors. The range for student responses to all items in this study was four out of the four possible given the available rating scale for the November Student Questionnaires.

The average mean for the instructors' rating (4.10) for items relating to interaction strictly between the instructor and student was greater than the average mean for the same student items (3.87). The same was true for the items one (M = 4.69 for instructors; 4.34 for students) and two (M = 4.67 for instructors and 4.26 for students) specifically. Instructors tended to rate their perceptions of this type of opportunity as being available to a greater extent than did the students. However, student perceptions (M = 3.00) relating to item three, interacting by electronic means, were rated slightly higher compared to the same item from the instructor questionnaires (M = 2.93). The patterns created by the three individual means for both the instructor and student responses were visually quite similar to one another for this cluster as can be appreciated in Figure 1. Both groups perceived the face-to-face opportunities as strongly available while perceiving the electronic opportunities much less so, creating a dramatic downward trend as has been demonstrated.

Categories of Interaction: Between Students

Next to be examined was the relationship between instructor and student perceptions pertaining to the opportunities for interaction between students, accomplished by all methods described in the study including reading, listening, observing, writing, speaking, skill demonstration, and electronic communication (see Table 6). These elements were contained within items four, five and six.

The WFD instructors rated having provided such opportunities with the individual means for items four, five and six being 3.55, 3.12 and 2.41 respectively; with standard deviations at 1.430, 1.571 and 1.348 respectively; and an average mean of 3.02. Instructors perceived having made such opportunities available to a lesser extent than they did for the instructor to student interaction opportunities.

The WFD students in this study rated having been provided such opportunities with the individual means for items four, five and six as 3.44, 3.01 and 2.60; with standard deviations at 1.354, 1.502, and 1.376 respectively; and an average mean of 3.02. Students rated their perceptions of the availability of these types of opportunities as encouraged, but not strongly. Once again, the item dealing with electronic communication was perceived by students as being less available than the face-to-face forms of interaction.

The average mean for the instructors' rating for items relating to interaction between students was exactly the same as the average mean for the same student items (3.02). For the individual items the instructors tended to rate their perceptions of this type of opportunity as being available to a greater extent than did the students for the face-to-face interactions. However, with respect to item six which dealt with

instructor and student interaction via electronic means, the students again rated their perception of this opportunity as having been available to a slightly greater extent than the instructors. As with the first cluster, the patterns created by the three individual means for both the instructor and student responses were again visually quite similar to one another for this cluster as can be appreciated in Figure 1. Both groups perceived the face-to-face opportunities as available while perceiving the electronic opportunities less so, continuing the downward trend.

Categories of Interaction: Between Students and Parties Outside the Course

Last among those to be examined under research question five was the relationship between instructor and student perceptions pertaining to the opportunities for interaction between students and parties outside the course, accomplished by all methods described in the study including reading, listening, observing, writing, speaking, skill demonstration, and electronic communication. These elements were contained within items seven, eight and nine.

The WFD instructors rated having provided such opportunities with the individual means for items seven, eight and nine being 2.99, 2.29 and 1.68 respectively; with standard deviations at 1.450, 1.463 and 0.981 respectively; and an average mean of 2.32. Instructors perceived having not made such opportunities available to students, especially when compared to the perceptions regarding instructor to student or between student interaction opportunities. The instructor perceptions regarding electronic communication were regarded as not readily available to students.

The WFD students rated having been provided such opportunities with the individual means for items seven, eight and nine as 2.92, 2.44 and 2.04 respectively; with standard deviations at 1.399, 1.418, and 1.228 respectively; and an average mean of 2.47. Students rated their perceptions of the availability of these types of opportunities as, on the whole, available but optional. Once again, the item dealing with electronic communication was perceived by students as being considerably less available than the face-to-face forms of interaction.

The average mean for the instructors' rating for items relating to interaction between students (2.32) was less than the average mean for the same student items (2.47). In this category, instructors rated their perceptions of this type of opportunity as being available to a lesser extent than the students with regard to both items eight and nine. For item nine, which dealt with student interaction with parties outside the course via electronic means, the students rated their perception of this opportunity as having been available ($M = 2.04$) to a markedly greater extent than the instructors ($M = 1.68$).

As with the first two clusters, the patterns created by the three individual means for both the instructor and student responses were again visually quite similar to one another for this cluster as can be appreciated in Figure 1. Both groups perceived the face-to-face opportunities as available while perceiving the electronic opportunities less so, continuing the downward trend again. The difference for this cluster, however, is demonstrated by the slightly higher student rating in item nine. This was reinforced by the greater student average mean for the cluster (2.47) than the average instructor mean (2.32).

To summarize, the data reflecting the perceptions of both the instructor and student participants were consistent with one another as has been demonstrated. The rating of both groups indicated that they perceived classroom interaction with respect to instructor to student interaction as being strongly encouraged, while interaction between students was on average encouraged, and interaction between students and parties outside the course was encouraged but barely available. Within each of these categories, electronic communication was consistently rated higher in availability by students than by instructors.

Methods of Interaction: Reading, Listening, and Observing (Passive)

First to be examined among the methods of interaction were the opportunities to read written material, listen to, or observe activities provided or performed by all three categories of interaction (see Table 6). These elements were contained within items one, four and seven.

The WFD instructors rated having provided such opportunities with the individual means for items one, four and seven being 4.69, 3.55 and 2.99 respectively; with standard deviations at 0.554, 1.430 and 1.450 respectively; and an average mean of 3.75. Instructors rated their perceptions as having made such opportunities available to a greater extent with respect to instructor to student interaction, and progressively less with respect to interaction between students or between students and outside resources.

The WFD students in this study rated having been provided such opportunities with the individual means for items one, four, and seven as 4.34, 3.44 and 2.92; with

standard deviations at 0.773, 1.354, and 1.399 respectively; and an average mean of 3.57. Students rated their perceptions of the availability for these opportunities as strongly encouraged to encouraged.

The average mean for the instructors' rating (3.75) for items relating to interaction reading, listening, or observing by all three categories of interaction was greater than the average mean for the same student items (3.57). With respect to item seven which dealt with instructor and student interaction via electronic means, the students again rated their perception of this opportunity as having been available to a slightly greater extent than the instructors. A comparison of the standard deviations of ratings for individual items about their means again did not indicate marked variability between these ratings.

Methods of Interaction: Writing, Speaking, and Skill Demonstration (Active)

Next to be examined among the methods of interaction were the opportunities to write, speak, or perform skill demonstrations by all three categories of interaction. These elements were contained within items two, five and eight.

The WFD instructors rated having provided such opportunities with the individual means for items two, five and eight being 4.67, 3.12 and 2.29 respectively; with standard deviations at 0.799, 1.571 and 1.463 respectively; and an average mean of 3.36. Instructors rated their perceptions as having made such opportunities available to a greater extent with respect to instructor to student interaction, and considerably less with respect to interaction between students. However, instructors

rated their perceptions slightly less than students with respect to interaction between students and outside resources.

The WFD students in this study rated having been provided such opportunities with the individual means for items two, five and eight as 4.26, 3.01 and 2.44; with standard deviations at 1.043, 1.502, and 1.418 respectively; and an average mean of 3.24. Students rated their perceptions of the availability of these types of opportunities as strongly encouraged to encouraged.

Methods of Interaction: Electronic Communication

Last to be examined among the methods of interaction were the opportunities to exchange email, online chat, post messages to an electronic bulletin board, or instant message by all three categories of interaction. These elements were contained within items three, six and nine.

The WFD instructors rated having provided such opportunities with the individual means for items three, six and nine being 2.93, 2.41 and 1.68 respectively; with standard deviations at 1.314, 1.348 and 0.981 respectively; and an average mean of 2.34. Instructors rated their perceptions as having made such opportunities available to a moderate extent with respect to instructor to student interaction, and progressively less with respect to interaction between students or between students and outside resources.

The WFD students in this study rated having been provided such opportunities with the individual means for items three, six, and nine as 3.00, 2.60 and 2.04; with standard deviations at 1.364, 1.376 and 1.228 respectively; and an average mean of

2.55. Students rated their perceptions of the availability of these types of opportunities as strongly encouraged and encouraged.

To summarize, in considering the means for each of the individual instructor and student items, as well as the average means for each cluster, a pattern of similarity was noted from Figures 1 and 2. The mean for each item appeared to be congruent with the pattern created by the means of rated items from both groups. This suggested a convincing level of consistency or reliability between the perceptions from both groups, in that they may have had similar experiences regarding their WFD education during that semester.

Research Question Six: Relationship Between Instructor Perceptions of Interaction in the Workplace and Student Perceptions of Interaction in the Classroom

Research question six refers to the relationship between instructor perceptions of interpersonal interactivity as a priority in the workplace and student perceptions of its availability in the TCC WFD classroom. The frequency data for each questionnaire item for both instructors and students was reported in the discussion regarding research question two and three, and has been made available in Tables 4, and 5 as well as Figures 1 and 2.

From the data from the August Instruction Questionnaire, (see Table 4) it was recognized that 72% of the instructors rated their perception of interpersonal interaction as an element of success in the workplace associated with their teaching fields as absolutely essential. It was then noted from the frequency distribution for all nine items in the November Instructor Questionnaire that only the items relating to

direct instructor to student interaction, items one and two, received rating percentages above 50%, with both being rated as "required" in the designated WFD courses. Of further interest were the percentages for items relating to interaction with parties outside the courses, items eight and nine, which were perceived to have been "not available" by 45.6% and 57.8% of the instructors for these items respectively.

From the student perspective, the only items rated near or above 50% which were perceived as "required" elements of the WFD courses were also items relating to direct instructor to student interaction, items one and two, with 49.9% and 55.7% respectively. Again, item nine, electronic communication with parties outside the course, was perceived to be "not available" by 46.7% of the students.

To summarize, the data reflecting the perceptions of both the instructor and student participants were consistent with one another as has been demonstrated in Figures 1 and 2. Of the nine items rated in this study, instructors rated five items slightly higher in availability than did the students, while students rated the remaining four items higher than instructors. In consideration of the average of the means for the six clusters of items, only the cluster dealing with student to student interaction, items four, five and six, were the same for both the instructor and student averages, at 3.02. The average of the means for clusters of items one, four and seven for reading, listening and observing as well as two, five and eight for writing, speaking or skill performance were rated higher by the instructors. Clusters of items seven, eight and nine which focused on interaction between students and parties outside the course, as well as items three, six and nine focusing on electronic communication were rated higher by students. Overall, for questionnaire items one through nine, there was a

consistent pattern created by the individual means for both the instructor and student responses which were visually quite similar to one another, representing an overall downward trend from the first item to the ninth, as can be appreciated in both Figures 1 and 2.

Descriptive Analysis via Cross-tabulation Analysis

The data concerning classroom interaction in this study was further examined by considering subgroups within the instructor and student populations. These subgroups were formed among the instructors according to age, gender, years of employment, years teaching in WFD education, or their rating of interpersonal interaction in the workplace. Subgroups among the students included age, gender, and years of education beyond high school or its equivalent. The categories that follow are the result of cross-tabulation analyses which were performed in order to examine possible relationships within the previously mentioned characteristics of the participants in the study.

Age, Gender and Experience of the Participants

As a result of this study, valuable information regarding the ages of the instructor and student populations has been revealed. As was stated earlier in this chapter, the mean age of the instructors was 49.52, with a median age of 50.0, and a range of 29 to 70 years of age. The mean age of the students was 30.15, with a median age of 27.0, and a range of 16 to 72 years of age. While 70% of the instructors were born before 1960, 86% of the students were born after 1960.

In terms of gender, 67.8% of the instructors and 73.2% of the students were female, leaving 32.2% of the instructors and 25.7% of the students being male. This was approximately a 2:1 ratio of females to males among the instructors, while the ratio was 3:1 for females to males among the students.

The instructor population reported having spent an average of 20.92 years working in their respective career fields. Meanwhile, this group reported having taught in WFD education for an average of 12.39 years. Basically speaking, this group began working in their career fields in the early1980's while beginning their teaching careers in the early 1990's. For the students, the mean for their years of educational experience beyond high school or its equivalent was 3.31, with a median of 3.0. In this group, 61.7% of the students began their college education after the year 2000.

Interpersonal Interaction as a Workplace Priority

As shown in Table 2, 72% of WFD instructors (65 out of 90) rated interpersonal interaction as being "absolutely essential" for success in the workplace. This rating subgroup included 78.7% of all the female instructors and 58.6% of all the male instructors.

Their perspective on the priority that interpersonal interaction had in the workplace may have been influenced somewhat by age. An examination of the peak percentages relating to age and priority rating of interpersonal communication indicate that 49% of those choosing "absolutely essential" were born in the 1950's, while 46% of those choosing "essential" were born in the 1940's. No other decade

represented nearly the same percentage of instructors choosing either of these two ratings.

With respect to experience in their respective career fields as well as years teaching in WFD, instructors who chose the rating of "absolutely essential" for interpersonal communication were most likely to have begun working in their career fields during the 1970's and 80's and began teaching during the 1980's and 90's. These time frames are consistent with those reported for the overall population of instructors, so there were no noteworthy trends here.

Of the 65 instructors who stated that interpersonal interaction was "absolutely essential" for success in the workplace, this same subgroups' ratings for items one through nine as "required" included 75% for item one, 75% for item two, 21% for item three, 48% for item four, 40% for item five, 15% for item six, 28% for item seven, 15% for item eight, and only 1.5% for item nine. This dramatic decline from 75% to 1.5% was consistent with the decline demonstrated by the instructor group overall. The perspective of those instructors in the subgroup did not differ greatly from the rest of the population with respect to their perceptions on the nine items, as can be seen in the data in Tables 2 and 3 as well as Figures 1 and 2.

Perceptions of WFD Instructors and Students on Interpersonal Interaction

In looking at the responses to the nine items in both the Instructor and Student Questionnaires relative to the age of the participants, it was noted that more than 63% of all instructor responses which contributed to the mode for each item were associated with individuals born during the 1940's and 1950's. More than 63% of all

student responses which contributed to the mode for each item were associated with individuals born during the 1970's and 1980's. These figures are consistent with the distribution of the overall populations since 70% of the instructors and 68% of the students were born during the same decades respectively.

In the populations, the ratio of female to male instructors was approximately 2:1 and the ratio of female to male students was approximately 3:1. This was on the whole consistent with most of the items, with the exception of items relating to interaction between fellow students, items four and five. In item four, the ratio of female to male instructors who chose the mode of "required", the ratio increased to 5.8:1, almost triple that of the ratio for the population. For the student responses to this same item, the female to male ratio increased to 4.6:1. This item dealt with reading written material, listening to, or observing activities provided or performed by fellow students. For this item, 40% of the male instructors chose "encouraged" more frequently, while 30% of the male students choose "strongly encouraged" more frequently.

In item five, the ratio of female to male instructors who chose the mode of "required" was 5.75:1, again almost triple that of the ratio for the population. For the student responses to this item, the female to male ratio did not increase relative to the population, where the mode was "not available". This item dealt with exchanging written work, participating in role play or skill demonstration to be reviewed by fellow students. For this item, 35% of the male instructors choose "not available" more frequently.

The cross-tabulation analysis for employment experience in the career field which they teach at TCC did not reveal any important trend outside of that which was consistent with the instructor population. The population began working in the career fields which they currently teach at TCC during the late 1970's and 80's. The mode for each of the nine items was dominated by instructors whose employment began during these two decades. However, the concentrations were not overwhelming, ranging from 22 to 57% of those choosing the mode.

Most of the instructor population began teaching in WFD education during the late 1980's and early 90's. With respect to the nine items, there was no strong trend that might indicate a relationship between teaching experience and their choice for each of the items. The mode for several of the nine items was dominated by instructors whose teaching careers began during these two decades. However, for those items where the mode was not dominated by instructors' who began teaching during the 1980's and 90's, there was not another decade which shown to be particularly strong. The variation among response and decade were widespread, and therefore not indicative of any strong relationship.

A cross-tabulation involving the nine student items and the educational experience levels of the students was also conducted. The mean for their educational experience beyond high school or its equivalent was 3.31 years, the median was 3.0, and the mode was 2.0. This put the majority of students having begun their post-secondary education close to the year 2000 or shortly after. For the students who chose the mode as their response for each of the nine items, at least 60% began their

education on or after the year 2000. No marked deviation from the values for the population were noted.

It would have been possible to perform other cross-tabulation analyses using the data gleaned from this study, although these would not have been related to the purpose of the study. Therefore, further cross-tabulation analyses were not performed.

Summary

The analysis of data collected in this study has served to illustrate the perceptions of WFD instructors and students at TCC pertaining to interpersonal interaction. The characteristics of the instructor and student populations have been described. The perceptions of instructors pertaining to the priority of interpersonal interaction as an element of success in the workplace have been clarified. A great deal of data was gleaned regarding both populations and their perceptions of interpersonal interaction in the WFD classrooms at TCC, with emphasis on both the categories (instructor to student, between student, and student to parties outside the course) and methods of that interaction (active, passive or electronic).

Relationships within the data have been demonstrated in text, table and graphical form. Comparisons were made between the perceived classroom experiences, the instructors' perceptions regarding the workplace, as well as with the demographical characteristics of both populations. The significance of this data and comparisons will be discussed further in the conclusions chapter.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Effective interpersonal communication in the workplace is critical if employees are to participate as productive members of dynamic and ever-changing work environments. This study examined the interpersonal communication opportunities available in Workforce Development (WFD) classrooms at Tulsa Community College (TCC).

Summary of the Study

The Purpose of the Study

The purpose of this study was to describe and compare the perceptions of WFD instructors and students at TCC with regard to interpersonal communication in both the workplace and classroom, as it applied to various categories and methods of interaction.

This study was guided by the following research questions:

1. What priority ratings do WFD instructors at TCC place on interpersonal communication as an element of workplace success?
2. What degree of availability do WFD instructors at TCC perceive regarding different categories of communication interaction in the classroom, including instructor to student, student to student, and student to outside resource?
3. How do TCC WFD students perceive the availability of different categories of

interpersonal communication in their WFD courses, including instructor to student, student to student and student to outside resource?

4. How do TCC WFD instructors and students perceive the availability of different methods of interaction including reading, writing, listening, speaking, observation, skill performance and electronic media?
5. What is the relationship between instructor and student perceptions regarding the availability given to different categories as well as methods of interaction in the TCC WFD classroom?
6. What is the relationship between instructor perceptions of priority in the workplace and student perceptions of availability in the TCC WFD classroom?

Populations

This study was a population or consensus study. The populations of the study were limited to the instructors and students from the WFD programs at TCC. The instructor population (N = 90) for this study consisted of the full-time instructors teaching 16-week WFD program courses via the traditional classroom at TCC during the Fall 2003 semester. The student population (N = 1061) included all those students enrolled and present to complete a questionnaire in selected courses taught by the instructor population.

Research Procedures

Three separate questionnaires were created and used to gather data addressing the research questions. Demographic questions for the instructors related to years employed

in the industry or career field, years of teaching experience in WFD education, level of teacher-preparation education, age and gender. Demographic questions for the students included years of formal education beyond high school or its equivalency, age and gender. The first questionnaire addressed research question one and was referred to as the August Instructor Questionnaire. It contained only one core question dealing with the instructor's perception of interpersonal interaction as an element of success in the workplace associated with his or her specific teaching field. The first data gathering phase of this study occurred in August, 2003.

The second and third questionnaires went to the instructors and students respectively and were referred to as the November Instructor Questionnaire and the November Student Questionnaire. These were both distributed approximately twelve weeks into the 16-week semester. It was intended that this time frame would give instructors and students opportunity to experience a variety of learning activities in each course surveyed, should such opportunities have been made available. The November Instructor Questionnaire addressed research question two, while the November Student Questionnaire addressed research question three specifically. Both questionnaires elicited participant perceptions about reading, listening to, observing, writing, speaking, performing or exchanging electronic communication as elements of classroom activities, as reflected in research question four. Perceptions regarding these activities were directed toward exchanges between the instructor and student, student to student, and between students and parties outside the course. Research questions five, six and seven were addressed through an analysis of the collected data and will be discussed further in this chapter.

The core questionnaire items were designed to be examined both individually as well as within several different clusters. Rated items one, two and three all dealt with interaction between the instructor and student. Items four, five and six dealt with interaction among students, while items seven, eight and nine dealt with interaction between students and outside resources. The items were also clustered according to specific method of interaction. Items one, four and seven were concerned with reading, listening to or observing activities. Items two, five and eight were concerned with writing, role-play or skill demonstration as might occur in a performance or work-related simulation. Items three, six and nine were concerned with interaction involving electronic media.

Analysis of Data

Descriptive statistics were used to analyze the various elements of this study. Measures of central tendency and variability assisted in clarifying patterns in the frequency distributions associated with the various perceptions of instructors and students. The data concerning classroom interaction in this study was further examined by considering cross-tabulation analyses as they applied to subgroups within the instructor and student populations. These subgroups were formed among the instructors according to age, gender, years of employment, years teaching in WFD education, and their rating of interpersonal interaction in the workplace.

Data from each question was entered into and analyzed with the Statistical Package for the Social Sciences (SPSS®), version 11.0. The scope of this study was

strictly limited to the population of WFD instructors and students within TCC. Inferences to behaviors of other populations have not and will not be drawn.

Summary of the Findings

Many of this study's findings relate to instructors' and students' ratings of their perceptions of interpersonal interaction as elements of workplace and/or classroom activities. These ratings were measured with five-point Likert scales. The options in the August Instructor Questionnaire were 1 = Not necessary, 2 = Available but optional, 3 = Encouraged, 4 = Essential, 5 = Absolutely essential. The options in the November Instructor and Student Questionnaires were 1 = Not available, 2 = Available but optional, 3 = Encouraged, 4 = Strongly encouraged, and 5 = Required.

Perceptions of TCC WFD Instructors Regarding Interpersonal Communication in the Workplace

With respect to the first research question, WFD instructors at TCC (N = 90) consistently rated interpersonal communication as an element of success in the workplace very high, with 72.2% choosing "absolutely essential" while 26.7% chose "essential," and only 1.1% chose "encouraged". The mean rating was 4.76, the median was 5, and the mode was 5. The standard deviation was 0.48, the variance was 0.23, and the range was 2. These responses give clear indication that these WFD instructors perceive interpersonal communication as an essential component of successful performance in the workplace.

Perceptions of TCC WFD Instructors Regarding Interpersonal Communication in the Classroom

With respect to the second research question, WFD instructors at TCC rated the availability of interpersonal communication in the classroom with a range of responses. For the purposes of this research question, instructor responses were examined with a focus on their perceptions of three different categories of communication, including instructor to student, student to student, and student to outside resource. Questionnaire items were clustered according to each of these different categories, and analyzed according to their similarities and differences. An average of the means based on samples of unequal size was calculated for items clustered within each category, allowing for comparisons between the different categories.

From the November Instructor Questionnaires, the average of the means for the category relating to interaction between the instructor and student was 4.10. The average mean for the category relating to students interacting with one another was 3.02. The average mean for the category relating to interaction between students and resources outside the course was 2.32. By comparing these averaged means for the three categories to one another (4.10, 3.02, and 2.32), a steady decline is observed from category one through category three. Instructors' perceptions of having made various learning experiences available appears to have diminished greatly after the instructor to student interaction represented in the first category ($M = 4.10$), which equated with the rating of "strongly encouraged", compared to instructors' perceptions of interaction between students in the second category ($M = 3.02$) which was perceived as equivalent to the rating of "encouraged". Instructors' perceptions of provisional interaction between

students and resources outside the course was the lowest of the three categories (M = 2.32) and roughly equated with a rating of "available but optional".

Perceptions of TCC WFD Students Regarding the Availability of Different Categories of Interpersonal Communication in their Courses

The third research question focused on how TCC WFD students perceived the availability of the three different categories of interpersonal communication in their WFD courses. Questionnaire items were again clustered according to the three categories based on interaction between instructor and student, student to student and student to outside resource. An average of the means based on samples of unequal size was calculated for items clustered within each category, allowing for comparisons between the different categories.

From the November Student Questionnaires, the average mean for the category relating to interaction between the instructor and student was 3.87. The average mean for the category relating to students interacting with one another was 3.02. The average mean for the category relating to interaction between students and resources outside the course was 2.47. By comparing these averaged means for the three categories to one another (3.87, 3.02, and 2.47), a steady decline is observed when considering the first through the third category. Students' perceptions of having had available such learning experiences appears to have diminished after the instructor to student interaction represented in the first category (M = 3.87), which equated most closely with the rating of "strongly encouraged", compared to students' perceptions of availability of interaction between students in the second category (M = 3.02) which was perceived as equivalent to

the rating of "encouraged". Students' perceptions of interaction between students and resources outside the course was the lowest of the three ($M = 2.47$) and fell midway between the ratings equating to "encouraged" and "available but optional".

Perceptions of TCC WFD Instructors and Students Regarding Different Methods of Interaction

Research question four was concerned with describing the relationship, between instructor and student perceptions regarding the availability of different methods of interaction including reading, writing, listening, speaking, observation, skill performance and electronic media. This was done by sorting the questionnaire items into clusters relative to the method of interaction described in each item. The first cluster included the more passive elements of communication on the part of students such as reading, listening to, or observing activities. The second cluster included the more active elements of communication on the part of students such as submitting written work, speaking or performing skill demonstrations. The third cluster included active elements of communication which specifically related to electronic communication such as exchanging email, online chat, or messages posted to an electronic bulletin board. An average of the means based on samples of unequal size was calculated for each cluster, allowing for comparisons between the different clusters.

The average mean for the cluster consisting of the passive elements of communication, including reading, listening to, or observing activities, from the November Instructor Questionnaires was 3.75. The average mean for the same cluster from the November Student Questionnaires was 3.57.

The average mean for the cluster consisting of for active elements of communication, including submitting written work, speaking or performing skill demonstrations, from the instructor questionnaires was 3.36. The average mean for the same cluster from the student questionnaires was 3.24.

The average mean for the cluster consisting of electronic communication from the instructor questionnaires was 2.34. The average mean for the same cluster from the student questionnaires was 2.55.

In order to compare these averaged means for the three clusters to one another, the averaged means for the instructor items were 3.75, 3.36 and 2.34, while the averaged means for the student items were 3.57, 3.24 and 2.55 respectively. In comparing these averaged means for the three clusters both to one another and between the two participant groups, a steady decline can be observed when considering the first through the third cluster. The perceptions of both groups, either having made available or having been made available these learning opportunities appears to have diminished after the passive methods of interaction represented in the first cluster ($M = 3.75$ for instructors and $M =$ 3.57 for students). These ratings fell between with the ratings of "strongly encouraged" and "encouraged". The lesser averaged means for the active methods of interaction were represented in the second cluster ($M = 3.36$ for instructors and $M = 3.24$ for students), where both ratings equated more closely with "encouraged". The lowest averaged means were for electronic communication, represented in the third cluster ($M = 2.34$ for instructors and $M = 2.55$ for students), where both ratings fell between the ratings of "encouraged" and "available but optional". It was only in the third cluster, representing

electronic communication, that the averaged mean for the student responses was greater than the averaged mean for the instructor responses.

Relationship Between Instructor and Student Perceptions Regarding Categories and Methods of Interaction

Research question five was concerned with describing the relationship, between instructor and student perceptions regarding the availability of different categories as well as methods of interaction in TCC WFD classrooms.

In first looking at the availability ratings chosen by the study participants, it was noted that both instructors and students responded with the greatest percentages within their respective populations to six of the same ratings for the same items. Both groups chose "required" with the greatest percentage for the passive and active opportunities for interaction directly involving the instructor, as well as for the item dealing with reading, listening to, or observing activities performed by fellow students. Both groups chose "available but optional" with the greatest percentage for the item dealing with electronic communication between the student and instructor. Both groups most often rated opportunities to exchange written work, participate in role play or skill demonstration as well as electronic communication with parties outside the course as "not available". For these items, both groups perceived similar levels of availability for the category or method of interaction.

In contrast, instructors perceived opportunities to exchange written work, listen to or observe activities performed by fellow students as "required" while the students perceived such opportunities as "not available", as indicated by the mode for each. The

median for each item, however, was at the middle of the rating scale for both groups. This statement dealt with exchanging written work, participating in role play or skill demonstration to be reviewed by fellow students.

The average mean for the instructors' rating for items relating to interaction strictly between the instructor and student was 4.10, which was greater than the average mean for the same student items, at 3.87. Instructors tended to rate their perceptions of this type of opportunity as being available to a greater extent than the students. However, perceptions relating to interaction between the instructor and student by electronic means were rated slightly higher by students compared to the same item from the instructor questionnaires. The patterns created by the three individual means for both the instructor and student responses were congruent for this cluster, including a dramatically lower perceived availability rating given to electronic communication for both groups for this category, being interaction between instructors and students.

The average mean for the instructors' rating for items relating to interaction between students was exactly the same as the average mean for the same student items, being 3.02. The only difference between the rated perceptions of the two groups was that the students' perceived opportunities to interact with other students via electronic means to be available slightly more often than instructors perceived having made such opportunities available. The pattern created by the three individual means for both the instructor and student responses for items relating to interaction between students was also quite similar. Interaction via electronic communication for this category, being between students, was rated lower than other methods of interacting between students.

The average mean for the instructors' rating for items relating to interaction between students and resources outside the course was 2.32, which was less than as the average mean for the same student items, being 2.47. In this category, instructors rated their perceptions of this type of opportunity as being available to a lesser extent than the students. For student interaction with parties outside the course via electronic means, the students rated their perception of this opportunity as having been available to a considerably greater extent than the instructors. Yet again, interaction within this category, being between students and parties outside the course, was perceived by both groups to be of a considerably less available via electronic means than by other methods.

Relationship Between Instructor Perceptions of Interaction in the Workplace and Student Perceptions of Interaction in the Classroom

Research question six focused on the relationship between instructor perceptions of interpersonal communication priority in the workplace and student perceptions of its availability in the TCC WFD classroom. According to data from the August Instruction Questionnaire (see Table 2), it was observed that 72% of the instructors rated their perception of interpersonal interaction as an element of success in the workplace associated with their teaching fields as "absolutely essential", with a mean of 4.71.

The only items rating 50% or above and perceived as "required" in the designated WFD courses by instructors included both passive and active communication strictly between the instructors and students, with means of 4.69 and 4.67. The same items were rated as "required" by 49.9% and 55.7% of students with means of 4.34 and 4.26 respectively.

By contrast, it was interesting to note that both active communication and electronic interaction between students and parties outside the course were perceived by instructors to have been "not available" by 45.6% and 57.8% respectively. Likewise for students, the same two items were perceived to be "not available" by 37.7% and 46.7% respectively.

Summary of Findings based on Cross-tabulation Analyses

Cross-tabulation analyses revealed that the mean age for TCC's WFD instructors was approximately 19 years senior to the mean age for their students. Most instructors reported having been born during the 1940's and 1950's while the students were born during the 1970's and 1980's.

In terms of gender, there was approximately a 2:1 ratio of females to males among the instructors, while the ratio was 3:1 for females to males among the students. The only indication that gender may have been a factor with regard to their perception of interpersonal interaction in this study involved reading written material, listening to, or observing activities provided or performed by fellow students, where the ratio of female to male instructors who chose the mode of "required" increased to 5.8:1, almost triple that of the ratio for the population. For the student responses to this same item, the female to male ratio increased to 4.6:1, again greater than the ratio for the population. Forty percent of the male instructors chose "encouraged" more frequently for this item, while 30% of the male students choose "strongly encouraged" more frequently for this item.

Also evident among the cross-tabulation analyses, instructors demonstrated having ample experience in both their career fields and in WFD education. Students had relatively little experience in college, with that experience being mostly within the three years prior to this study.

Conclusions

The conclusions drawn from the results of this study have been related to the original research questions, the cross-tabulation analyses, and other specific elements of the study. These conclusions apply only to WFD instructors and their students at TCC; generalization beyond these specific populations is not warranted by this descriptive study.

For both November Instructor and Student Questionnaires in this study the Likert-type scale was used with a "not available" response along with four other choices directing participants to rate their perceptions of current interpersonal communication events available in their courses. The options were "1 = Not available", "2 = Available but optional", "3 = Encouraged," "4 = Strongly encouraged," or "5 = Required," indicating varying degrees of perceived availability of the experience.

The following conclusions were drawn from the study's findings:

1. Overall, TCC WFD instructors placed a high priority on interpersonal communication as an element of success in the workplace, which is also consistent with the current literature on the subject. TCC WFD instructors are aware of the critical nature of interpersonal communication in today's workplace.

2. There is strong cross-validation between the instructor and student responses regarding the availability, or lack thereof, in terms of opportunities for interpersonal communication in the TCC WFD classroom. Both the instructors and students quite similarly rated the availability of the various categories (instructor and student, student to student, and between students and parties outside the course) and different methods (active, passive and electronic) of interpersonal communication in the classroom. The more passive methods of interaction on the part of the students were regarded as being more available than the more active methods of interaction. This indicates that WFD instructors tend to more often use instructor-centered methods lacking opportunities for interpersonal interaction, as opposed to student-centered methods which consist of greater opportunities for students to collaborate, cooperate and work in teams, all skills highlighted in the literature as being critical in the workplace.

3. There is a lack of congruence between the high priority given to interpersonal communication as an element of success in the workplace as reported by instructors and the lesser availability of interpersonal communication in the classroom reported by both the instructors and students. Therefore, opportunities for interpersonal communication are not being made available to students in such as way as to adequately prepare them for the workplace.

4. Both instructors and students perceived interpersonal interaction in the classroom via passive methods (reading, listening, or observing) as being available to a greater extent than were the active methods (writing, speaking, or performing skill

demonstrations). Instructors who have not been schooled in the principles of adult education may tend to teach as they were taught, and so prevails the more teacher-centered methods as opposed to the student-centered methods involving more opportunities for self-direction, opportunities to apply their learning as well as opportunities to solve real problems related to their learning.

5. While instructors did not perceive interaction between students and parties outside the course via electronic communication as available, students did perceive these opportunities to be present. The students are taking it upon themselves to make their courses more active and technology-rich. This probably has two reasons. First, they are adults and thus focused on self-direction and quite capable of demonstrating their choices by going outside the course to contact resources in an attempt to solve their own problems. Second, many of these students are young enough to be technology literate. As discussed in Chapter II, this conclusion is supported and predicted in the literature by both Papert (1996) and Tapscott (1998), who stated that young people would seek out for themselves the interactive and electronic environment, thereby taking control of their own learning and perceiving more availability than their instructors feel they provided.

6. Elements involving opportunities for collaboration, cooperation, teamwork and technology were all considerably lower on the availability and rating scale than was the rating for the availability of interaction with the instructors. Since these elements were describe in the literature to be essential for success in the workplace, students in

TCC WFD education may not be adequately prepared to participate in these activities due to a lack of preparatory classroom opportunities.

7. Based on the analysis of questionnaire and demographic data in this study, it was concluded that ages of the instructors compared to the students was important. While the majority of instructors were born during the 1940's and 1950's, the majority of the students were born during the 1970's and 1980's. The widespread availability of technology for more recent generations has created an increased appetite for interactive environments, especially among younger individuals. With the differences between the two age groups in this study, instructors and students, coupled with their very different roles in the educational arena, it must be taken into consideration that the two groups have been exposed to different cultures with respect to technology.

8. Gender may have been a factor with regard to both instructor and student perceptions on interpersonal interaction between students. Females may tend to give use, or perhaps have an increased awareness of, opportunities for interpersonal interaction within peer groups.

9. Many instructors come to WFD education without the benefit of training in content development and teaching skill. These instructors need to be provided with professional development opportunities to sharpen their skills. Without access to such opportunities, the instructors may be unable to assist in adequately preparing graduates for the workplace. Simply being able to perform such skills themselves

does not equate to being able to teach and create adequate learning opportunities for the benefit of students. Instructors could benefit from professional development that supports an increased awareness of interpersonal communication as a teaching goal as well as instructional and assessment strategies that can be successfully integrated into WFD education to the benefit of students. Development opportunities in curriculum development, instructional strategies, assessment, and the principles of adult education could be beneficial in helping WFD instructor preparation for the realities 21st-century workplaces provide.

10. TCC WFD instructors are not at all negligent in their attempt to provide opportunities for interpersonal interaction in the classroom. This was supported by the data collected in this study indicating that all items except one were rated at or above "available but optional". The only item receiving a rating below that of "available but optional" was the perception of the instructors regarding electronic communication, and for this item the students perceived more opportunities for electronic communication than the instructors. No items were rated by the two groups overall as wholly "not available".

Summary:

Based on the review of literature, it has been established that interpersonal interaction is a critical element in the workplace, across a variety of disciplines. This was echoed by the instructors' majority perception that interpersonal interaction is "absolutely essential" as an element of success in the workplace associated with the career fields

represented in WFD programs at TCC. Therefore, the availability of ample opportunities to improve interpersonal communication skills in WFD education programs is vital for preparing graduates to meet the expectations of the workplace.

Recommendations for Practice

Based on the data collected in this study, the following recommendations are made:

1. Enhance WFD classroom learning experiences with a variety of instructional delivery methods and strategies.
2. Increase the use of both collaborative and cooperative learning opportunities in WFD curricula, thus preparing students to become efficient knowledge workers with the ability to perform higher order skills such as problem solving, analysis, synthesis, and evaluation combined with strong interpersonal communication skills. Individual as well as collaborative and cooperative opportunities can be created which might include problem-based learning, case studies or work simulation activities where students must manipulate, re-organize, and otherwise improve upon information provided. Another strategy might include having students instruct one another and critique both the instruction and learning tasks.
3. Establish and maintain contacts with industry that would be suitable resource contacts for students to access while in WFD programs.
4. Integrate current and developing technology into WFD curricula through professional development opportunities. It is important to educate instructors on current technology available for interpersonal communication as well as the avenues for

accessing and using such technology on a regular basis to communicate with students, industry contacts and colleagues.

6. Make WFD instructors aware of the collective perceptions held by themselves and students regarding interpersonal communication in their classrooms.
7. Apprise curriculum developers in WFD programs of the current and future priority of interpersonal communication across various categories and methods of communicating as they apply to the workplace and apply a similar model to the classroom environment.
8. Create, update and/or maintain program standards and performance criteria which are current with industry standards for interpersonal communication. This could be accomplished by examining duty task lists, or similar documents on a regular basis and noting their inclusion of program expectations which should be consistent with workplace expectations, particularly those relating to interpersonal communication.
9. Encourage WFD curriculum developers and instructors to integrate the andragogical principles of adult education into classroom activities, taking into consideration characteristics common to adult learners. This could be accomplished by creating cooperative and collaborative opportunities for students to explore the rationale behind content-based projects as they relate to their future workplace, thereby incorporating self-directed study, the sharing of past experiences, exercising their readiness to learn relevant information, while accessing resources outside the course for confirmation.

Recommendations for Further Research

As a result of conducting this study, the following points have been identified as possible foci for further research:

1. Explore the incongruence between instructor awareness of the necessity for interpersonal communication in the workplace and the availability of such learning opportunities in the classrooms at TCC. Identify the reasons for this incongruence and ways of overcoming barriers to implementation of a full range of interpersonal opportunities.
2. Identify the interpersonal communication skill requirements of specific career field or WFD program, as they might differ with respect to allied health, business, human services, manufacturing, nursing, science, technology, etc.
3. Examine the uses and prevalence of electronic communication among community college and WFD instructors in their cooperative and collaborative efforts.
4. Establish and evaluate the degree of inclusion of interpersonal communication within specific WFD programs or disciplines.
5. Evaluate the awareness of instructors regarding the andragogical principles of adult education, and how such principles might benefit WFD education at TCC.
6. Evaluate the skills of current and new WFD instructors regarding instructional design and delivery, and the use of these elements in WFD classes.
7. Clarify what constitutes a sufficient level of preparation for the workplace as it applies to interpersonal communication skills for the various disciplines under the WFD education umbrella at TCC. Compare industry requirements to those in WFD courses.

8. Replicate the results of this study within larger populations such as across the university parallel portions of TCC, and within other community colleges.
9. Evaluate the effects of professional development training in interpersonal communication teaching strategies in the classroom practices of TCC WFD instructors.

Summary

Educators in workforce development programs must adapt to meet the demands of preparing workers of today and tomorrow. Gray and Herr (1998) described a dual mission of workforce education:

> One is to promote individual opportunity; the other, though not necessarily the second in importance, is to promote economic growth by solving human performance problems and thereby increasing productivity. (p. 21)

In order to provide educational opportunities through which adult learners can eventually create their own successes, WFD educators must learn to remove themselves from the center of the educational process and regard students and their learning as the highest priority. Most adult learners possess characteristics that make them suitable partners in the pursuit of the goal of becoming a productive asset to the workplace. Adult learners require assistance in creating and accessing their own educational environments which will facilitate their development toward becoming efficient and ever-learning knowledge workers who are capable of analyzing, synthesizing and evaluating information to solve problems, then combining technical knowledge with strong

interpersonal communication skills for the betterment of their future employers and communities. It should be the mission of WFD educators to assist students in achieving this goal.

It is hoped that this study will contribute to the research base in WFD education, serving to bring attention to the need for improved interpersonal communication to WFD education, and improve the availability of opportunities for interpersonal interaction in the classrooms of TCC.

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APPENDIXES

APPENDIX A

AUGUST INSTRUCTOR QUESTIONNAIRE

Workforce Development Interpersonal Communication Study
Instructor Questionnaire
August, 2003

1. How many years have you been employed in the industry or career field which you currently teach at TCC? _____ years

2. How many years have you been teaching in Workforce Development Education (also known as Technical / Occupational Programs)? _____ years

3. Which of the following best describes your teacher-preparation education? Check (√) one.

   ____ a. No formal preparation

   ____ b. Some formal education, but no degree or certification

   ____ c. Academic Degree in Education

   ____ d. Teacher Certification

4. What is your age? _____ years

5. Gender: ____Male ____Female

6. How would you rate interpersonal interaction as an element of success in the workplace associated with your teaching field? Circle only one.

   1 Not necessary

   2 Available but optional

   3 Encouraged

   4 Essential

   5 Absolutely essential

Thank you for your time!

APPENDIX B

NOVEMBER INSTRUCTOR QUESTIONNAIRE

Workforce Development Interpersonal Communication Study
Instructor Questionnaire
November, 2003

Directions:
Please rate each of the following statements using the 1-5 scale to the right.
Circle the number that most closely reflects your belief.

In rating these statements, please limit your responses to only the activities associated with the specific course as has been indicated to you.

5 = Required
4 =Strongly encouraged
3 = Encouraged
2 = Available but optional
1 = Not available

Through the syllabus, agenda, goals, objectives and all instructions pertaining to this course, I have provided students the opportunity to…

1. Read written material, listen to, or observe activities provided or performed by me, the instructor.....	1	2	3	4	5
2. Submit written work, speak before, or perform a skill demonstration to be reviewed by me, the instructor.....	1	2	3	4	5
3. Exchange email, online chat, electronic bulletin board postings or instant message with me, the instructor.....	1	2	3	4	5
4. Read written material, listen to, or observe activities provided or performed by fellow students.....	1	2	3	4	5
5. Exchange written work, participate in role play or skill demonstration to be reviewed by fellow students.....	1	2	3	4	5
6. Exchange email, online chat, or messages posted to an electronic bulletin board posted by fellow students.....	1	2	3	4	5
7. Read written material, listen to, or observe activities provided or performed by parties outside this course.....	1	2	3	4	5
8. Exchange written work, participate in role play or skill demonstration with parties outside this course.....	1	2	3	4	5
9. Exchange email, online chat, or messages posted to an electronic bulletin board with parties outside this course.....	1	2	3	4	5

Thank you for your time!

APPENDIX C

NOVEMBER STUDENT QUESTIONNAIRE

Workforce Development Interpersonal Communication Study
Student Questionnaire – November, 2003

1. How many years of formal education do you have beyond high school or its equivalent? _____

2. Your Age: _____

3. Gender (check one): _____Male _____Female

Directions:

Please rate each of the following statements using the 1-5 scale to the right. Circle the number that most closely reflects your belief.

In rating the following statements, please limit your responses to only the activities associated with the specific course as directed.

5 = Required
4 = Strongly encouraged
3 = Encouraged
2 = Available but optional
1 = Not available

Through the syllabus, agenda, goals, objectives and all instructions pertaining to this course, I have been provided the opportunity to...

1. Read written material, listen to, or observe activities provided or performed by the instructor.....	1	2	3	4	5
2. Submit written work, speak before, or perform a skill demonstration to be reviewed by the instructor.....	1	2	3	4	5
3. Exchange email, online chat, electronic bulletin board postings or instant message with the instructor.....	1	2	3	4	5
4. Read written material, listen to, or observe activities provided or performed by fellow students.....	1	2	3	4	5
5. Exchange written work, participate in role play or skill demonstration to be reviewed by fellow students.....	1	2	3	4	5
6. Exchange email, online chat, or messages posted to an electronic bulletin board posted by fellow students.....	1	2	3	4	5
7. Read written material, listen to, or observe activities provided or performed by parties outside this course.....	1	2	3	4	5
8. Exchange written work, participate in role play or skill demonstration with parties outside this course.....	1	2	3	4	5
9. Exchange email, online chat, or messages posted to an electronic bulletin board with parties outside this course....	1	2	3	4	5

Thank you for your time!

APPENDIX D

CONSENT FORMS

WORKFORCE DEVELOPMENT INTERPERSONAL COMMUNICATION STUDY
PARTICIPANT CONSENT FORM

I, _____, hereby agree to participate in the research project conducted by Carla Hinkle that provides information on Workforce Development Instructor and Student perceptions of interpersonal communication.

This research will seek information regarding interpersonal communication in Workforce Development (WFD) Education, also known as Technical / Occupational (T/O) Education.

I understand that my participation in this research is voluntary, that there is no special incentive for my participation, that there is no penalty for declining participation, and that I am free to withdraw my consent and participation at any time.

I understand that the purpose of this research is to improve preparation and the effectiveness of instruction within Workforce Development at Tulsa Community College and to contribute to the body of knowledge and professional literature regarding instructional design and delivery of Workforce Development Education.

I understand and agree to the following conditions regarding my voluntary participation in the research:

- My participation will involve completion of a questionnaire that will take about 5 minutes of my time.
- My responses will be anonymous and treated with complete confidentiality.
- My responses will be collected and placed in a sealed envelope where they will remain until analyzed.
- The data yielded from this research will be used solely for instructional improvement and research purposes.
- Any data from this research used for preparation and publication of professional research literature will be anonymous and reported only in the aggregate.
- No specific reference to my name, personal identity, particular WFD or T/O program will be made at any time.
- All records of this research will be maintained by the researcher.
- All such records will be destroyed upon completion of this research.

If I have questions or concerns, I may contact the researcher, Carla Hinkle, at Tulsa Community College by telephone at (918) 595-7011 or by email at chinkle@tulsacc.edu. I may contact Carla Hinkle's research advisor, Dr. Lynna Ausburn at Oklahoma State University by telephone at (405) 744-8322 or by email at alynna@okstate.edu. I may also contact Sharon Bacher, IRB (Institutional Review Board) Executive Secretary, Oklahoma State University, 415 Whitehurst, Stillwater, OK 74078; phone (405) 744-5700.

I have read and fully understand this consent form. I sign it freely and voluntarily. A copy has been given to me for my personal record.

Date: _____ Time: _____(a.m./p.m.)

Signed: _____
(Signature of subject)

I certify that I have personally explained all elements of this form to the subject or his/her representative before requesting the subject or his/her representative to sign it.

Signed: _____ Print Name: _____
(Data Collection Team Member)

RESEARCHER'S COPY

WORKFORCE DEVELOPMENT INTERPERSONAL COMMUNICATION STUDY
PARTICIPANT CONSENT FORM

I, _____, hereby agree to participate in the research project conducted by Carla Hinkle that provides information on Workforce Development Instructor and Student perceptions of interpersonal communication.

This research will seek information regarding interpersonal communication in Workforce Development (WFD) Education, also known as Technical / Occupational (T/O) Education.

I understand that my participation in this research is voluntary, that there is no special incentive for my participation, that there is no penalty for declining participation, and that I am free to withdraw my consent and participation at any time.

I understand that the purpose of this research is to improve preparation and the effectiveness of instruction within Workforce Development at Tulsa Community College and to contribute to the body of knowledge and professional literature regarding instructional design and delivery of Workforce Development Education.

I understand and agree to the following conditions regarding my voluntary participation in the research:

- My participation will involve completion of a questionnaire that will take about 5 minutes of my time.
- My responses will be anonymous and treated with complete confidentiality.
- My responses will be collected and placed in a sealed envelope where they will remain until analyzed.
- The data yielded from this research will be used solely for instructional improvement and research purposes.
- Any data from this research used for preparation and publication of professional research literature will be anonymous and reported only in the aggregate.
- No specific reference to my name, personal identity, WFD or T/O program will be made at any time.
- All records of this research will be maintained by the researcher.
- All such records will be destroyed upon completion of this research.

If I have questions or concerns, I may contact the researcher, Carla Hinkle, at Tulsa Community College by telephone at (918) 595-7011 or by email at chinkle@tulsacc.edu. I may contact Carla Hinkle's research advisor, Dr. Lynna Ausburn at Oklahoma State University by telephone at (405) 744-8322 or by email at alynna@okstate.edu. I may also contact Sharon Bacher, IRB (Institutional Review Board) Executive Secretary, Oklahoma State University, 415 Whitehurst, Stillwater, OK 74078; phone (405) 744-5700.

I have read and fully understand this consent form. I sign it freely and voluntarily. A copy has been given to me for my personal record.

Date: _____ Time: _____(a.m./p.m.)

Signed: _____
(Signature of subject)

I certify that I have personally explained all elements of this form to the subject or his/her representative before requesting the subject or his/her representative to sign it.

Signed: _____ Print Name: _____
(Data Collection Team Member)

PARTICIPANT COPY – PLEASE RETAIN FOR YOUR PERSONAL RECORDS

APPENDIX E

DATA COLLECTION TEAM SCRIPT

APPENDIX F

AUTHORIZATION TO CONDUCT RESEARCH

WORKFORCE DEVELOPMENT INTERPERSONAL COMMUNICATION STUDY
Data Collection Team Script for Instructor Questionnaire – November, 2003
Instructor & Student Contact: In-person ONLY

[Arrive promptly at the date, time & place arranged from the previous instructor contact.]

Mr./Mrs./Ms. _____, thank you for your time.

My name is _____, from the data collection team for Carla Hinkle's graduate study.

I'd like to give you the Instructor copy of the consent forms and questionnaire. If you have any questions after I present the forms to your students I'll be happy to assist you.

[Present the November, 2003 Consent Forms and Instructor Questionnaire. Be sure the form numbers correspond to those for this particular instructor as per your call sheet.]

[To Students & the Instructor...]

Hi! My name is _____ and I'm collecting data for a research study that is being conducted by Carla Hinkle. Ms. Hinkle is a TCC instructor at the Metro campus in the Physical Therapist Assistant program. She is also a graduate student at Oklahoma State University and currently collecting data for a Master's Thesis on interpersonal communication in Workforce Development or Technical / Occupational programs, as they are also known at TCC.

We would like to ask for your assistance in this study by having you read and sign a consent form, then complete a brief questionnaire that will only take about 5 minutes of your time.

[Hand out the November, 2003 Consent Forms and Student Questionnaires. Be sure the form number in the bottom right hand corner of each corresponds to the instructor's name on your call sheet.]

Once these forms are completed they will be separated, concealed, and your identity will be protected. Should you have any questions or concerns, please feel free to contact Ms. Hinkle at the telephone number or email addresses listed on the consent form.

[Upon receipt of a completed Consent Forms and Questionnaires...]

Thank you for your time and consideration! The results of this study will be available upon request at the completion of the study. Simply contact Ms. Hinkle at the number or email address on your copy of the Consent Form. Have a nice day!

[At this time also collect the November, 2003Consent Form & Questionnaire from the Instructor. Answer any questions to the best of your ability and refer others to the contact for Ms. Hinkle.]

[to the Instructor:] **Thank you for allowing us this time! A report of the study results will be available upon request at the completion of the study. Simply contact Ms. Hinkle at the number or email address on your copy of the Consent Form. Have a nice day!**

[Secure the completed Researcher's Copy of the Consent Form and Instructor Questionnaire in their respective envelopes and depart. ***Should an instructor choose not to participate in the study, simply thank the instructor for his or her time and note this on the call sheet.]***

Tulsa Community College

(918) 595-7000

CONFERENCE CENTER
6111 East Skelly Drive
Tulsa, OK 74135-6198

METRO CAMPUS
909 South Boston Ave
Tulsa, OK 74119-2095

NORTHEAST CAMPUS
3727 East Apache
Tulsa, OK 74115-3151

SOUTHEAST CAMPUS
10300 East 81st Street
Tulsa, OK 74133-4513

WEST CAMPUS
7505 West 41st Street
Tulsa, OK 74107-8633

April 23, 2003

Institutional Research Board Committee
Oklahoma State University
301 Whitehurst
Stillwater, OK 74078-1025

Dear Committee Members:

Having reviewed the research proposal of Carla Hinkle, I am pleased to authorize and lend my support to its implementation. We request that any results be filed with the office of Institutional Research at Tulsa Community College and an executive summary be filed with the office of Academic Affairs.

Sincerely,

John T. Kontogianes, Ph.D.

John T. Kontogianes, Ph.D.
Executive Vice President
and Chief Academic Officer

JTK:cac

APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL FORM

Oklahoma State University
Institutional Review Board

Protocol Expires: 8/4/2004

Date Tuesday, August 05, 2003 IRB Application No ED0410

Proposal Title: INSTRUCTOR AND STUDENT PERCEPTIONS OF INTERPERSONAL COMMUNICATION IN THE WORKFORCE DEVELOPMENT CLASSROOM IN A COMMUNITY COLLEGE

Principal Investigator(s)

Carla Hinkle
13694 E. Yeager's Way
Inola, OK 74036

Lynna Ausburn
235 Willard
Stillwater, OK 74078

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 415 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson by David C Thomas

Carol Olson, Chair
Institutional Review Board

#1

Vita

Carla Z. Hinkle

Candidate for the Degree of

Master's in Occupational and Adult Education

Thesis: INSTRUCTOR AND STUDENT PERCEPTIONS OF INTERPERSONAL COMMUNICATION IN THE WORKFORCE DEVELOPMENT CLASSROOM IN A COMMUNITY COLLEGE

Major Field: Occupational and Adult Education

Biographical:

Education: Graduated from Roswell High School, Roswell, New Mexico in May 1979; received Bachelor of Science degree from New Mexico State University in May 1983; received Associate Degree in Applied Science from Tulsa Community College in August, 1991; completed the requirements for the Master's Degree in Occupational and Adult Education at Oklahoma State University in May 2004.

Professional Experience: Active Duty, United States Army from 1984 – 1987; Physical Therapist Assistant in Acute Care at Tulsa Regional Medical Center, Tulsa, Oklahoma, 1991–1993; Delegate to the Federation of State Boards of Physical Therapy, 1998 – 1999; Subject Matter Expert Committee Member for the Physical Therapist Assistant Job Analysis via the Federation of State Boards of Physical Therapy, 2000 – 2001; Physical Therapy Advisory Committee to the Oklahoma State Board of Medical Licensure and Supervision, 1997 – 2002; Associate Professor, Physical Therapist Assistant Program, Tulsa Community College, 1993–present;

Professional Memberships: American Physical Therapy Association, Oklahoma Physical Therapy Association.